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JANUARY, 1944

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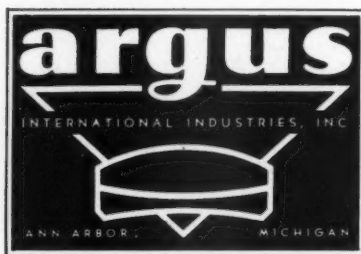
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Cover by Victor De Palma

WHAT'S NEXT?

Sometimes the editors promise a feature for the next issue and it appears two or three months later, under a disguise. How about that? Friends, that's the publishing business. We'll be cagey and say that you should be reading the following articles in MINICAM very soon. Harry Shigeta will show how he found Lincoln, or a reasonable facsimile. Along that line Stan Loeber tells you how to be rational in making character studies. We interviewed Fred G. Korth and obtained a portfolio of industrial photographs. This blustery winter weather never deters James H. Thomas, evidently, for we have his pictures on "Storm Photography." Then there will be a surprise or two for the technicians, and—hold everything—a competition for amateurs who want to help pictorially in the war effort. Start looking through your negatives and see if there is something to illustrate "This Is America."

EDITORIAL ASSOCIATES: John Hutchins, A. R. P. S., George R. Hoxie, L. Moholy-Nagy, Audrey Goldsmith.
CONTRIBUTING EDITORS: Charles S. Mertz, F.R.P.S., Percival Wilde, A.R.P.S., Stuyvesant Peabody, A.R.P.S.
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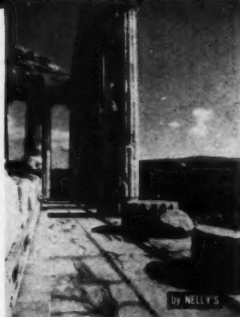
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2. Behind the giant camera is KENNETH GRIMM, recent graduate of THE SCHOOL OF MODERN PHOTOGRAPHY. His SMP training enabled him to qualify at the advanced photography school at Yale University. Grimm will graduate a 2nd Lieutenant. Men approaching draft age would do well to learn more about the School's basic photography course.



Official Army Air Corps Photo



3. That "Modern" Touch is characteristic of student work. Just graduated SALLY PIPER (see left) will have ample opportunity to demonstrate this quality at New York's famed Museum of Modern Art as assistant to "the complete photographer," Willard Morgan. As more and more SMP graduates continue to make the grade, more and more photographers, institutions and industrial plants are turning to the School's busy Placement Bureau for qualified assistants.



4. Information Please! "What about tuition fees?" Specialized courses, day or evening, are exceptionally moderate. Visit the School, or write for outline of courses. Address H. F. Sidel, director, Dept. M1.

THE SCHOOL OF MODERN PHOTOGRAPHY
136 East 57th St., New York City

The Last Word

We're So Used to Seeing Things in a Ground Glass . . .

betrayed you. The rocks in the upper right-hand corner of the picture on page 42 of the December issue. This is the way you printed that excellent reflection, it will probably look all right because however, it will be written up-side-down. To you, appear to be written up-side-down. To most people this letter would doubtless

Respectfully submitted,

PG. LLOYD C. GABLE,
90th Airdrome Sqdn.,
Hunter Field, Ga.

Don't Think for a Minute

Sir:

You won't mind, I am sure, if I do a little leg pulling which I can't resist. But in future I shall be more careful to send you reflection pictures which are not so good that one can't tell which is the reflection and which is the real thing. You gave me a very good spread in this month's issue, but I suffered a mild shock when I saw stones floating in the sky in that one reproduction. I know that you were frightfully rushed with this issue, and don't think for a minute that I am upset. . . .

GEORGIA ENGELHARD,
1121 Madison Avenue,
New York City.

• As all members of the Fortean Society know, stones do float in the sky. Our page 42, December, is just another proof.—Ed.

Sir:

Here's mud in your sky!

Aren't you ashamed of publishing a beautiful picture like that on page 42 of your December issue, and presenting it upside down?

Georgia Engelhard might have mentioned that in the clear air at high altitudes there is a disproportionately high percentage of ultra-violet and near ultra-violet which affect both black-and-white and color film more than the meter indicates unless a clear "haze" filter is used to reduce this end of the spectrum.

Lorus J. Milne
(Charter Subscriber)

Eldridge Reeves Johnson
Foundation for Medical
Physics, Philadelphia, Pa.

Never Say Die

Sir:

If you write another story of old time photographer's include the true tale of the print of the mother of twins who died in childbirth. They propped her up. Put the new twins in her arms; posed her husband in the formal manner and clicked the shutter. It's the truth, the print is available. Your Weegee is a sissy.

EUGENE WYBLE,
Worton, Maryland.

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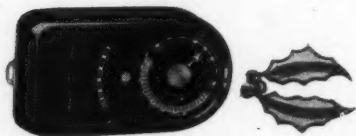
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Revere Camera Company, Chicago, Illinois



Pin-up Girl

Sir:

Here's a nomination for Nebraska's pin-up girl. She is Pat King, of Lincoln, Neb. We're for her (strong).

S/SGT. GENE JANTZEN,
331 T. S. S.
Lincoln A. B., Lincoln, Neb.



Pu-nip Lirg

Sir:

Yes, it is a pin-up girl. The Harry Conover office never heard of her, but Our Little Darling, as you can see, has heard of him.

Mrs. BESS HUGHES,
5734 Lemp Ave.,
North Hollywood, Calif.

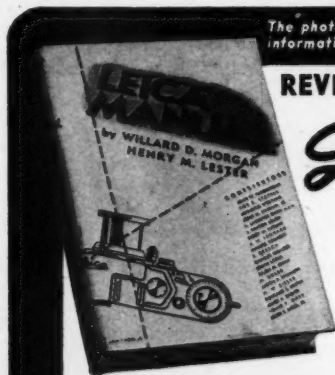


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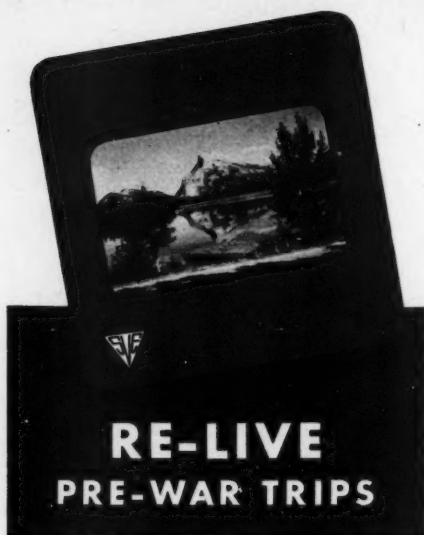
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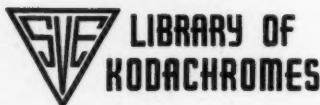
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The Biggest Always Get Away

Sir:

Many, many thanks for the helpful criticism which you so kindly gave on the three snapshots I sent in to you.

I am now on maneuvers here in the Great American Desert, and during maneuvers we are not allowed to take any pictures. My camera has been checked at higher headquarters until we return to base camp. I miss it, indeed, and now that I haven't a camera with me I've run across dozens of appealing settings here in the desert; to name a few: wild life (especially of the crawling species), trees, sand dunes, and the most wonderful skies imaginable. This could be a photographer's paradise. I doubt that much of the wild beauty of this desert has been captured on film, in this location anyway, as we are miles from a town, or even a public highway. . . . Just call me a desert rat!

This issue of MINICAM is superb, especially the article on "Fundamental Optics." It is just such articles as this that I am so interested in.

SGT. O. P. SPEED,
Hq. 79th Div. Arty.,
APO 79, c/o Postmaster,
Los Angeles, Calif.

Greetings from St. Louis

Sir:

At a meeting of the Camera Club Council of St. Louis, held November 30th, it was announced that George Richmond Hoxie had been added to the editorial staff of MINICAM. The announcement was received with enthusiasm by those present.

A few of us in St. Louis had the pleasure of meeting and becoming acquainted with Mr. Hoxie last spring, when he served as one of the jurors at the 3rd St. Louis International Salon of Photography, he impressed us most favorably and we are sure that he will add to MINICAM. Please place before him these nine subscriptions from our Council members.

WILLIAM E. CHASE, *President*,
Camera Club Council
of St. Louis, Inc.

Nursing Mother

Sir:

The first thing I read in the MINICAM, is "The Last Word." You can imagine my surprise at reading the letter written by Mrs. M. E. of Chicago, Illinois, concerning the picture of the mother nursing her baby, by Peter Koch.

To tell the truth the picture really made no impression on me, so I got out the November issue and looked at it again. It is a beautiful picture. I have a son who is thirteen and a half years old, and I wish I had a picture of him as a baby, at my breast.

I pride myself in the fact that I don't have to hide anything from my son. I showed him the picture and had him read Mrs. M. E.'s letter and he said, "My gosh, mom, everybody knows how most babies are fed."

Anyone who thought that picture shouldn't have been printed, has no beauty inside of them and I'll bet their picture work shows it.

MRS. GEORGE TYLER,
Chula Vista, California.



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A Defender advertisement dedicated to one of the freedoms for which America fights . . . and which American photographers have recorded so often with their cameras.

It was on one of your Sunday drives before Dunkirk, Pearl Harbor or Lidice, when you saw this boy teaching a calf to drink. Instinctively you reached for your camera. With Defender Film to capture the scene as you saw it, and with Defender Paper upon which to print it, you had the makings of a real picture.

It was a good picture then . . . but a better picture still today. It is only a boy with his first calf . . . but to him it is the start of a thriving dairy herd. Here he can look ahead and dream and know that those dreams can

come true . . . for this is America.

In a small way . . . in a human way . . . the scene pictures the Freedom of Individual Enterprise that has shaped the whole destiny of America . . . one of the rights of free men for which this lad himself may even now be fighting.

Defender

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All dozen packages of Defender Papers are now inclosed in the handy opening Rip-Strip envelopes. Look for the trade-mark: Defender Rip-Strip.

To reveal... and to interpret

WHEN you point a camera in the general direction of another person and snap the shutter, do you have any special goal in mind about the picture you'd like to get? Most of us are able to record how John or Mary looked at the moment we snapped the shutter; but frequently people who don't know John or Mary find the picture a little dull. When our picture of a friend interests most people who see it, we can usually be sure that we have put a piece of ourselves into the picture.

Almost every defense plant worker has a photographic identification button. There must be five million of them. It is doubtful if even one of these buttons approximates a good portrait. Isn't the reason for that fundamental—and if we can eradicate that reason from ourselves as photographers, then we are going to do better work.

The difference between such libels on the human face and expressive portraits is not so much a matter of film, accessories, or even technique, as it is a problem of the photographer having a definite idea of what he wants to accomplish.

PINOCLÉ

Skippy Adleman





Fundamentally, when you come to think of it, the cause of pointless snapshots is that the person who made them didn't have any reason in his mind for taking the picture, other than making a record.

A four year old child, who knows the alphabet, might hit the typewriter keys for an hour and if he wrote one lucid sentence, it would be a minor miracle. Later, when that four year old child has an idea in his head, he will use the alphabet and write a sentence that makes sense.

It is the same with the photographer. Does he have an idea in his head to start with? When so, the chances of his making photographic sense are quite good. But without a goal, clearly conceived, there is a probability of a running stream of meaningless snaps as we lift them out of the hypo bath. The photographic goals that you may have are many—but unless you actually have a definite motivation guiding your selection of subject matter and expression—then your good shots will be your lucky ones.

We'd like to propose, from the many motifs available, two that will set the angle of your selection. We suggest you photograph people so as to *reveal* one human being to another; and also, when possible, to *interpret* that human being, in the light of your own judgment, by adding a comment of your own. This photographic comment grows out of your own viewpoint, your attitude, your likes and dislikes. You seize upon an anomaly, a bit of incongruity, a contrast of people from their background and from it make your point. For instance, in this facing photograph by Helen Levitt, we see two children fighting in a boarded up Coliseum in Mexico. As all of us know, bull fighting is encouraged in Mexico by the Government, by politicians and by various Societies. The photographer's point, apparently, is in a country where a ferocious sport such as bull fighting is encouraged, it is not unlikely that the spirit of this ferocity will be visited upon the youth of the land.

Two children fighting against a colorless sky might make a picture and it might

not. Point is given to the facing picture by the mute spectacle of the background.

In the picture on the preceding page of the pinocle game, Skippy Adelman tells us that it is a relaxing, pleasant and wonderful thing to have a card club to go to where plain people can take off their ties, keep on their hats and play a game of penny ante. It is a sympathetic, warming approach.

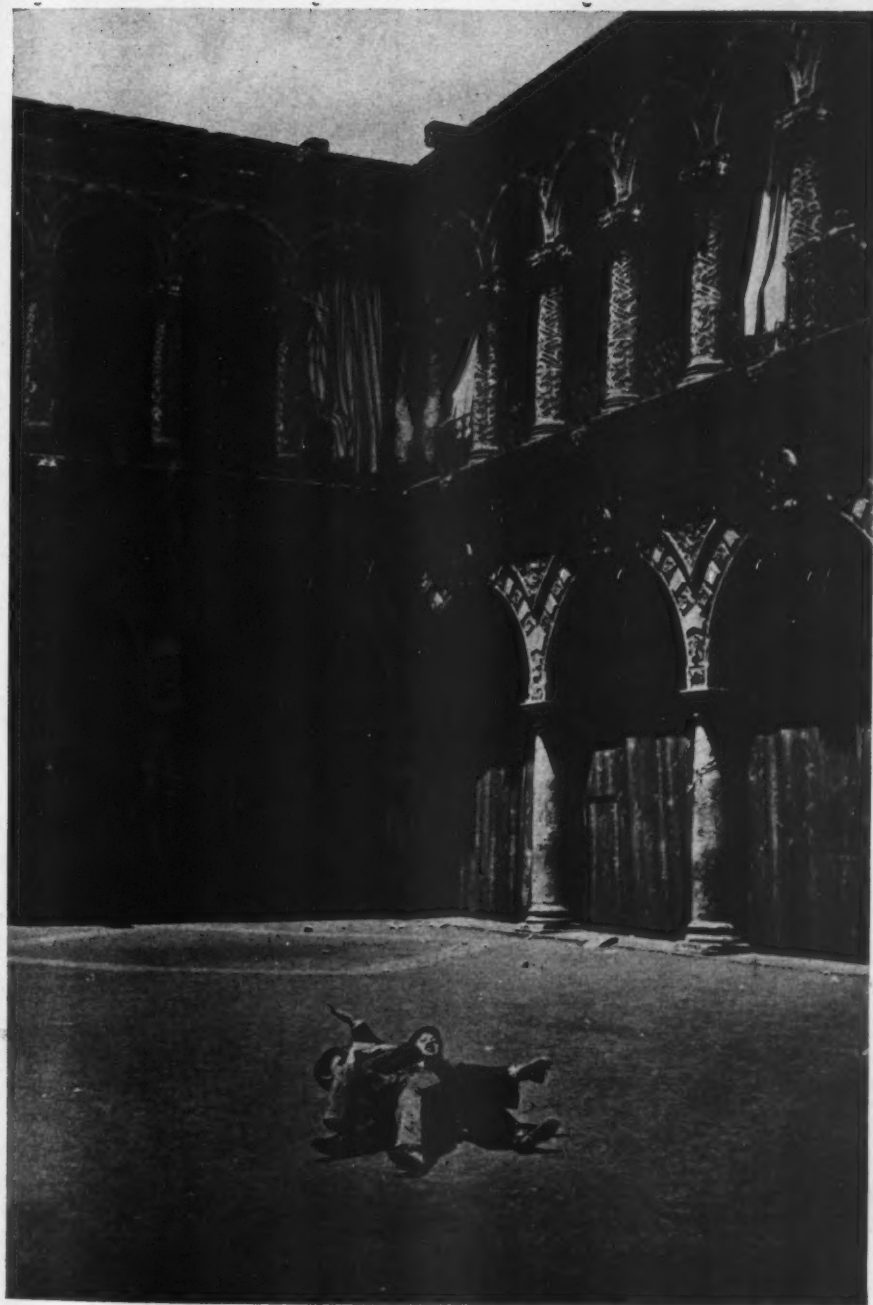
Next time you focus your camera on a person, ask yourself what you may do to reveal this person and how you may comment on him and interpret his way of living as a human being. Your comment need not be profound. It may merely be a sly bit of fun; as, for instance, in these gay photographs by Mary Lowber Tiers of two children having their pictures painted at the Greenwich Village Art Fair. One child squirms, restless, anxious to be off (page 80) the other is saucer-eyed, breathless (page 18). In each of them, we recognize ourselves and so we know the photographer has done a job.

DRESSING a man up to look like

Father Time and photographing him may be a lot of fun. Here, you may say to your friends, is a picture of an old man, a real character I met on the waterfront. They admire it politely. Then you flash the news that it is really your neighbor down the street, good old Charlie Butterfinger. There are howls of delight, you are slapped admiringly on the back, and those hours in the dark room are repaid. Sure, that's fun.

Many of us also want to relate ourselves to the world about us, and to have the world and its activity related back to us. Photography, as a hobby, or profession, is the most marvelous and agreeable means of doing this. Whenever we manage to reveal a bit of a human being's personality, we make for better understanding among peoples. And whenever we offer our own comment on that bit of revealed personality, we permit people to share in what we have learned.

Such photographs, because of their foray into significance catch hold of us all, and



Photograph by HELEN LEVITT



GREENWICH ART FAIR

MARY LOWBER TIERS



LITTLE MAN, WHAT F STOP?

RUS ARNOLD

we look at them again. It is something of a minor tragedy that the people who invariably try to reveal and interpret human beings have so little patience with print control. F 16, 1/100, flash, any old developer, glossy paper, blow it to 11 x 14 and crop to 8 x 10. That's the technique of most photographers who have a vigorous and independent point of view. And the chap who tidies up each millimeter of his print, who burnishes, and stews over toning is often the gentleman whose

masterpiece turns out to be our old familiar Father Time.

Photography is full of goals for you to choose. Be sure, however, that you have one. Most of our advertising photographers are concerned with dressing models up to look like somebody else. As a result, we have all made use of the general term "advertising art" which is simply a critical phrase meaning "artificial or "transparent."



Photograph by LUCIEN AIGNER

As amateurs, whether advanced or neophyte, let us select a goal for our pictures about people. To reveal . . . and to interpret is a possible goal. There are, of course, others equally worthy.

RECENTLY we were looking through a few prints made by Rus Arnold, one of the country's aces on flash technique. His pictures followed a curious pattern. There was one photograph of a gnarled tree stump. Deep recesses in the stump showed clearly the whorls and patterns of the naked wood. Every bit of it was sharp. We learned that Rus took the picture to illustrate flash photography could get detail and detail that was inside of a shadow. One picture after another added up to the same story: "I took it to show how, with flash photography, we can . . ." None of this group of prints had any other significance, although all were real technical marvels.

We came on the picture which Rus Arnold called "Little Man, what F stop?". It was taken, he said, years ago, with a

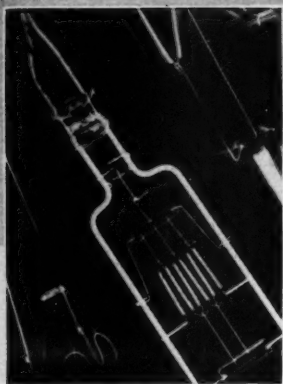
little film pack camera, when he was studying under Will Connell in Los Angeles. He was in love with photography and impressed with its far reaches which no man can fully explore. His picture carried out this interpretation. The large, looming trees, and the little figure of man, black against the sky, trying to capture a morsel of the expanse before him. All of us who have packed a camera to the country, and stood at the threshold of an inviting meadow, or at the summit of a hill overlooking wide country have thought how modestly, at the very best, we reproduce nature.

Response from people who look at our pictures comes from having a good reason for taking the picture in the first place. If our reason is only to show that ortho film makes lips more red, that a yellow filter darkens the sky, or that John, at half-past eleven leaned against a wall, our pictures will receive less response.

Landscapes, people, abstracts all give us an opportunity to interpret and give meaning to what we see.



Photograph by ALFRED EISENSTAEDT
from Pix



SOMETHING NEW UNDER THE SUN . . .


The postwar world of photographic miracles is imperceptibly peeping out from behind a curtain of secrecy. These photographs are made by Berenice Abbott's new way of lighting.

BELOW is a picture of a magnetic field. Tiny iron filings appear with stereoscopic clearness. On the opposite page is a portrait notable because of three dimensional detail in the face, the whiskers, the pudgy skin. These two photographs are the work of Berenice Abbott who refuses to be pigeon holed as "our most skillful skyscraper photographer." For two years she has been at

work on a highly secret method of lighting which, she believes, will provide for sharper and more revealing texture. She says:

"My new process is in the stage of evolution and needs time and money before it can be hatched full bloom. However, I feel safe in saying that it has great possibilities for giving us more realism in photography. Probably every angle of our medium needs revolution-





izing since its present condition is little beyond that of 1900 and in many ways not as good."

Visiting at 50 Commerce Street, Greenwich Village, to pay his respects to this vigorous lady, one of MINICAM's editors happened by when some of her new experimental photo-

graphs were laid out on the floor for scrutiny. Pictures of the interior of a watch case, taken by this new method, show detail such as have never before been available photographically. Everyone with an interest in lighting will be interested in the outcome of her experiments.

EXPERIMENTAL EXERCISES



TWO 500 WATT spots and a flood were used in this study of "Venus"; the background was kept in complete shadow so that a photogram could be worked out.

B y A L A N F O N T A I N E

A FEW of the readers of my last article may have tried listening to a juke box for inspiration; others may have wandered around the streets after it had been raining, looking at puddles and neon signs. That's what I suggested as a means of "inspiration" for creative photographic interpretation. But when it came to executing your ideas, the technical facility wasn't there. That isn't anything to be apprehensive about, because the story of graphic artists throughout history has been one of overcoming the technical difficulties in order to express what the mind "sees".

This article is accompanied by three

different examples of experimental photography, and I will try to explain each one step by step. Specifically, we shall be dealing with the forms known as "montage" and photogram or shadow-graph.

The first example is a close-up of a girl, in an attempt to get away from typical glamour photography, in which some blond in a low cut evening gown gazes at you from some cute position on a bear-skin rug.

The problem is to surround the blond in our photograph with a setting that will enhance her beauty by providing an interesting mood. A "montage" is employed

to do the job. This involves the combination of two or more negatives to form an image, which is then projected on the enlarging paper.

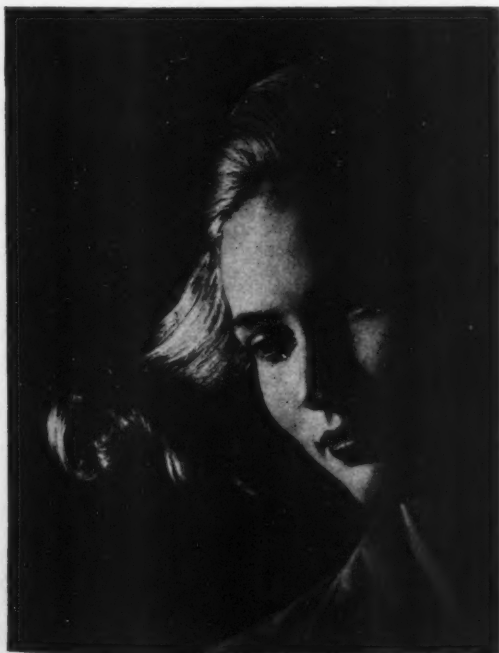
MAKING A MONTAGE

My first photograph was a direct shot of the girl in which one 500 Watt spot was used, (Fig. 1.), posed lying down so that her hair could be arranged in the desired form. The camera was directly above the girl and facing down. The spot had to be placed very close to the floor to achieve the proper modelling of the facial structure, being very close to good "old" 45 degree lighting. You will remember that this brings in a light that falls on the cheek in a triangular form, and keeping the nose shadow from overlapping the mouth. The lighting must model the entire left side of the head, so that an observer becomes conscious of the inner



UPPER RIGHT: "Venus" in the role of fan dancer was created by placing feathers in the carrier along with the negative; the bubbles were created by glass balls in contact with the enlarging paper. **BELOW:** "Girl and Driftwood," Fig. 1, shows a quiet calm mood far from bearskin rug glamour; while Fig. 2, with the addition of the driftwood negative, takes on an air of phantasy.

FIG. 1 FIG. 2





TRY THIS type of photograph to help your feeling for composition and lighting.

bone structure. What single element are we working with? It is the form,—the three dimensional characteristic of the subject. A piece of undeveloped enlarging paper has two dimensions. Our finished photograph must give the illusion that there are three dimensions, and by controlling the contrast of lights and darks in the “building” or modelling of structure that this three dimensional aspect can result.

It is important in this shot to keep the light off the background. In this way we will be able to place another negative on top of this one and have the image show through.

What facial expression would be desirable in a shot of this type? There are many; so try a series. Avoid the open-mouthed toothy grins that typifies the person who has just had some amazing breakfast food. I think a pensive, rather “dreamy” expression would be effective. The moment to say, “hold it”, is when this quiet mood is expressed by the model. You’ll have to determine just when that

moment occurs. The greatest directors in photography are people who have keen psychological insight and can “catch” an expression at the height of its intensity. Experience will help you a lot; an article in a magazine can only suggest the procedure.

The second part of the montage is a close-up of a piece of driftwood from Cape Cod. This was selected because of its interesting textural surface and the suggestion of woodlands. Many other natural forms could have been used — roots, flowers, bark, moss, ivy, etc.

Again, only one spot was employed to illuminate the subject. Before shooting the second part of the montage, I took the finished negative of the girl and taped it to the groundglass of my camera so that a section of the driftwood could be selected with regard to its effect in the composition. In this way, the tie-up with the head of the girl could be clearly seen. The camera was moved around till an interesting section of the wood formed a good design or pattern with the head of the girl. As in the first negative it is necessary to keep light off part of the image, so that it is possible to see the image of the girl in what will finally be the shadow portion of the driftwood.

After processing, the two negatives are taped together and printed in the usual manner. It is advisable to under-expose slightly in each case, because of the corresponding gain in the density when the two negatives are printed together.

THE MONTAGE WITH A PHOTOGRAM

THE second example is the photograph of the glass and clock within a frame. Step one is just a straight shot without any “trimmings”. An ordinary frame was placed in front of the subject. It had an opening measuring ten by twelve inches, and the camera was about three feet from this opening on a plane slightly above the bottom of the frame. The glass was behind the opening, and rested on some gravel purchased at a pet shop. (I can’t remember the ceiling price on gravel). The glass was filled with water in order

to pick up some bubbles and to help in the composition. It's quite amazing to see how much the level of the water effects the composition. The clock is an antique that I found nestling on top of some flower pots in a forgotten nook of my closet. In the photograph it was hung by some black thread and placed about a foot in back of the glass. The cover of the face was opened to help in the composition and to add an element of interest; after all, most clocks have their pictures taken with their faces covered, why not this one open? Such is the simple line of reasoning of the "experimentalist." Three 500 Watt spots were used to light the subject. One low spot illuminated the glass and served as a texture light on the gravel; the second picked up some more light on the glass, and the edge of this light filtered over to the clock. These lights were to the side and slightly to the rear of the subject. The third spot was employed to silhouette the glass and give an element of depth to the work.

Before taking the next picture, the outline of this image can be drawn on the groundglass or on a piece of tracing paper which is taped to the groundglass.

We now come to exercise two, and one thing is to be stressed: There is no intentional symbolism involved! There wasn't any symbolism in the glass and the clock; they were selected because of their pictorial possibilities. But, now with the addition of a human being, the symbols begin to wiggle their pert little heads. What is behind the picture? Is the pipe smoker waiting for the clock to strike twelve, so that he can take a pill and drink the water? Does the glass of water symbolize the placidity of mankind, and the clock its turmoil and movement? Maybe the smoker is symbolic of mankind hedged in between these two elements. Well, maybe. The crux of the matter is that any number of subjects could have been used. This one happened to be a student of mine who was around.

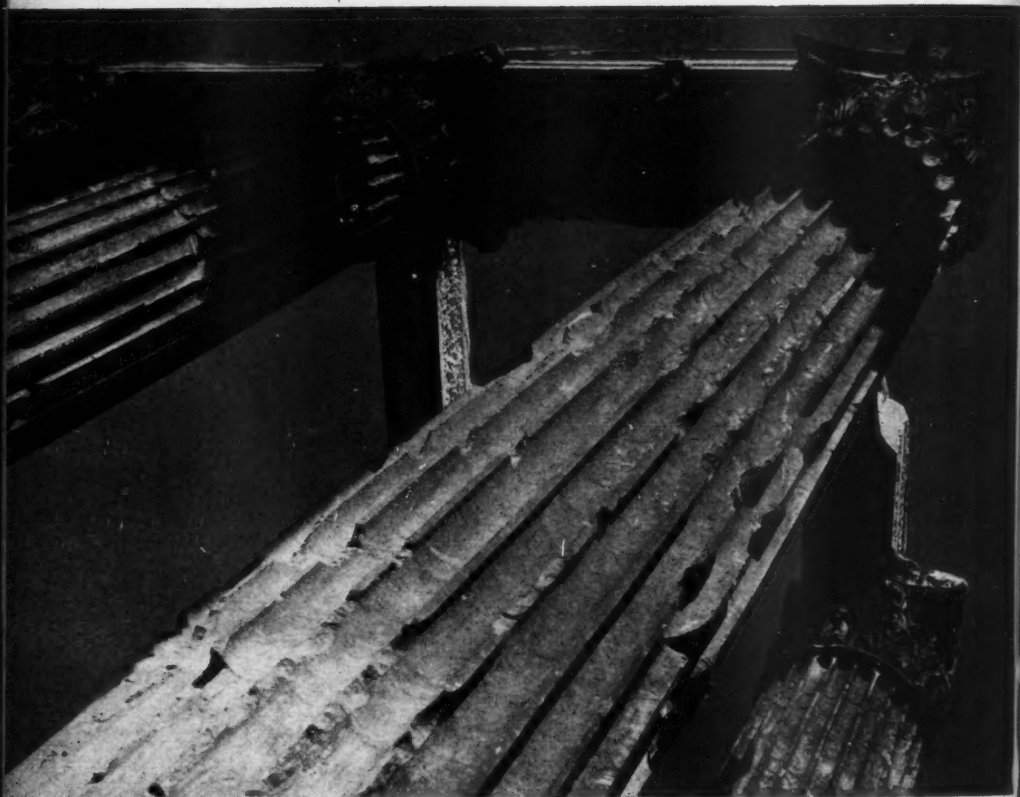
One 500 Watt spot was directed at the subject from a 45 degree angle to achieve

(Continued on page 74)



THE "SMOKER" was shot against a dark background and the negative printed in conjunction with the one on the opposite page. Below: The first negative is combined with a simple photogram. Experiment with objects that have varying degrees of transparency.





COLUMNS OF THE TEMPLE OF ZEUS AT ATHENS

THE PURSUIT OF AN IDEAL

PHOTOGRAPHS BY MADAME NELLYS
ROYAL GRECIAN PHOTOGRAPHER

TEXT BY A. M. MATHIEU

THE average photographer, if he thinks about the matter at all, looks on Grecian architecture and philosophy as being 'way uptown. Curiously, what the Greeks stood for is so much a part of us today that, without even a second thought, we respond to it favorably.

Many of us take it for granted that we enjoy "classic lines" without wondering why our neighbors feel the same way. The reason is that our history as Americans begins with the ancient Greeks! Their force,

like that of the Americans on the Mayflower, generated as a revolt.

The deliberate pursuit of an ideal is the big idea the Greeks gave us. They set up an ideal man, and an ideal community and tried to realize them through education. To this Greek ideal, Voltaire and Jefferson each returned for their social and political inspiration.

Is there a way to transmit this ideal photographically, since the purpose of photography, just like the purpose of the



CHILDREN OF CRETE

printing press, is to transmit ideas in addition to facts?

Since we are so abundantly related to the Greeks, artistically and politically, it may be helpful to examine our original ideals, as it were, face to face.

Greek buildings are the core of what we respond to in architecture. Our favorable response arises because the architecture is deliberately planned to express the Greek ideal of character and that character is part of our very being.

Perhaps we may study these photographs and gain an inspiration from them that will help in "seeing" the Greek ideal.

The Greeks tried to create a higher type

of man. No other people before them ever had that thought. Consciously, and with determination, the Greeks tried through education to raise mankind. Instantly it is apparent how this clashed with the passive Indian "Nirvaneh," the slow moving Indian religious fanatic, who so tried to befuddle his mind that he was "in tune with the infinite;" worthless, useless to society except as a slave. It was against this that the Greeks revolted, just as today we revolt against the Nazis and Nipponese ideas of the complete subordination of individual man, so that a few men may have great power and wealth.

Today all of us have a searching de-



THE TEMPLE OF NIKE APTEROS NEAR ATHENS

sire to quiet other sounds so that we may listen intently to that remote hum that once gave us a common start. The Greek people first realized that the world is not run by chance or fate, but rather by definite laws. They set out to discover these one by one, and we are still at it. To them each part of the universe was related to another part, and that to the whole. Nothing stood separate. Seen in this light, was it unnatural that Willkie's book, "One World," should prove so popular since it relates itself right back into the source of our being civilized. Today a scientist performs a thousand experiments and from them tries to formulate a summary that will prove a point. The Greeks looked for one all-pervading law that would be a Rosetta stone to all inquiry.

As we amateur photographers pass the point where technical dexterity once made us all thumbs, few of us find that we have something to say. And so we resolve this defeat into trying to make a print "sharper than Weston's." A re-examination of the thing that started us going as a nation, of the ideal that two thousand years later continues to separate us from the Malayan or the Japanese, will help us to crystallize our thoughts and let our photographs speak. The Greek ideal man was a poet, a statesman, and a philosopher. This was his trinity. Perhaps from this starting point we can stem our photographic Ideal. And in so doing we may feel sure it will strike a popular response because it grows out of a common heritage.



SHEPHERD OF CRETE

THIS ISLANDER is from the southwestern part of Crete, where live its most handsome men, and all of them fiercely independent. Their tiny mountain valley has never been occupied, even by the Turks during their 400 years of occupation of all Greece. The courage and fighting spirit of the people there, and the lack of communication in the "white mountains" kept a victorious invader of 400 years' standing from collecting a drachma in tax. Today the German army is not capable of controlling this fragment of the island and Crete Guerillas are still hiding there hundreds of English and Australian soldiers and harassing the Germans. They are supplied with ammunitions and arms by Allied airplanes.

WHAT PAPER

SHOULD I USE?



FIG. 1

AUGUSTUS WOLFMAN

WHEN you purchase paper to make prints, you call for a particular brand, and have to indicate the grade or contrast. If you inquire about the use of the different grades, the answer will be that the medium paper is used for normal or medium negatives; the soft paper

for contrasty negatives; the medium-hard paper for slightly weak negatives; and the hard paper for weak, thin negatives. This is correct, but it does not tell why the different grades are necessary.

Examine a few of your negatives. Notice the highlight portions—which in the

FIG. 1. A normal negative. Normal or medium paper is needed to obtain a good print. **FIG. 2.** A flat negative. Hard or contrasty paper is needed to obtain a good print. **FIG. 3.** A contrasty negative. Soft paper is needed to obtain a good print.

FIG. 2



FIG. 3





FIG. 4

PRINT FROM a flat negative on soft paper.



FIG. 5

PRINT FROM a flat negative on medium paper.



FIG. 6

PRINT FROM a flat negative on contrast paper.

negatives are the darkest areas—and also notice the shadow areas, or lightest portions of the negatives. You may find, that the highlights are translucent, and some of the deep shadow areas are not entirely transparent, but have a slight tone. If prints were made whose tones bore a direct relationship to those in the negative, highlights would be slightly grey, and supposedly deep shadow areas would not be dark enough. Such prints would be far from satisfactory. Despite the relation of tones in the negative, we want prints with bright highlights and good shadows. This can often be made possible through the use of the correct grade of paper.

PRINT FROM a contrasty negative on soft paper.

FIG. 7



PRINT FROM a contrasty negative on medium paper.

FIG. 8



PRINT FROM a contrasty negative on contrasty paper.

FIG. 9

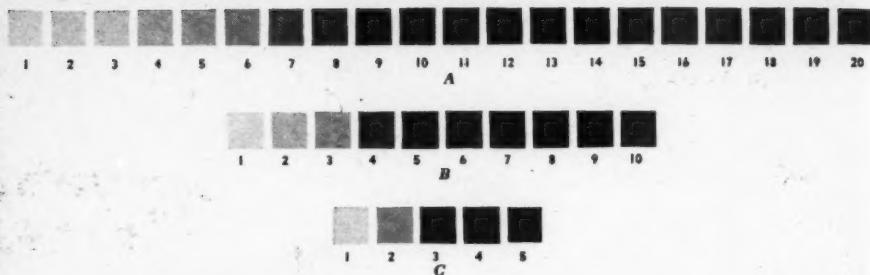


Two factors which determine the range of tones, from the lightest to the darkest portions of the negative, are the subject itself, and the development of the negative.

Developing affects the difference between the lightest and darkest portions of the negative, because the longer the development, the greater is the contrast, up to a certain point.

Every subject can be interpreted in shades of grey, or a range of tones from the lightest to the darkest areas. Let us presume we are photographing a subject dressed in clothes of a medium shade of grey, outdoors, on a dull overcast day. We look for the darkest tone in the subject,

FIG. 10



AN ARBITRARY example of the tonal range of soft, normal and contrast papers.

then the lightest, and imagine the range or number of tones between the two. It would be small, indeed.

A subject of an entirely different nature would be a girl in a white blouse and dark skirt lighted by a brilliant afternoon sun; the light coming from the side and casting heavy shadows. Here we have the extremes of the brilliant highlights of the white blouse, to the deep shadows in the folds of the black skirt. The range of tones, or difference, from the deep shadows to the highlights may be about 150 whereas in the former subject it was about 10.

To visualize how to match the grade of paper to the negative, let us assume that there is a maximum range of tones of 20, as represented by Fig. 10a. We have three different negatives: one is weak and flat, the tone range from the lightest to the darkest portions being 5. The second is medium with a range of 10, and the third is a contrasty negative having a range of 20. Our aim is to obtain good prints from the three negatives. (The figures indicating tone range are purely arbitrary, being used for "illustrative" purposes only).

If the thin negative (1 to 5 tone range) is held up to light, the highlights would be transparent. A print from this negative with tones which are directly relative to those in the negative, is a flat picture with grey, muddy highlights. To produce a good print, we need a paper capable of reproducing a range of only 5 tones from white to black. Even though the 5th or

darkest tone in the negative is a light grey, the tone range of the paper is so short that we will get brilliant, not greyed highlights, and deep shadows. This type of paper is represented by the set of squares in Fig. 10c. It is referred to as a "contrast" or "hard" paper.

To more fully understand this principle, let us assume that the thin negative, with the tone range of 5, is printed on a paper having a range of 20—a "soft" paper intended for contrasty negatives. The print is exposed and developed so that the highlights are clear. How about the shadows? Since the negative has a range of only 5, and the print was made so that the highlights are clear, count five squares from the white end of the 1 to 20 scale (Fig. 10a). The 5th square is a shade of grey, which represents the tone of the shadows in the print. This is unsatisfactory.

Let's try a reverse procedure. The print of the 1 to 5 negative is printed on the 1 to 20 paper so that the shadows are black. To find how the highlights will appear, count 5 squares from the black end of the 1 to 20 scale which is a dark shade of grey. Result: A flat muddy print. The way to get a satisfactory print from this negative is to use a paper with a 1 to 5 tone range.

The 1 to 20 scale (Fig. 10a) represents the type of paper to use for a contrasty negative, having a relatively large range of tones from the lightest to the darkest portions; and the scale of 1 to 10 (Fig.



FIG. 11

PRINT FROM a normal negative on soft paper. Note the general greyness and lack of detail.



FIG. 12

PRINT FROM a normal negative on contrast paper. There is not enough tonal range or detail.



FIG. 13

PRINT FROM a normal negative on medium paper. Note the detail in the models' faces and the cliff.

10b) illustrates the type of paper for a medium negative.

If you should try to print a 1 to 20 (contrasty) negative on a 1 to 5 (hard) paper you are trying to compress a large number of tones into a paper capable of reproducing only a short range, with the result that the picture is contrasty.

Look for the range from the dark areas to the light areas—highlights to shadows—to estimate the grade of paper to use. Despite considerable experience, you will find instances where you will have to make prints on two different grades of paper to select the best.

The general tendency is to designate the different grades by numbers—1, 2, 3, 4, etc., from soft to contrasty papers. Similar grade numbers of different manufacturers may not have exactly the same tone range.

Select a number of negatives ranging from a thin one to a contrasty one, and make prints from each negative on every grade of paper. While this consumes time and paper, it supplies a good education on matching the paper to the negative.



EVENING

By David Darvas

Control Yourself

By David Darvas

GIVE ME your negative and I'll give you mine and we'll both come out of the darkroom with prints. And the print you make from my negative might be a lot better than I could do.

I merely want to point out that the negative is the main reason why we assume such a critical attitude when we view a print for the first time. Unconsciously, we realize various print-possibilities from that unseen negative, so we begin our helpful constructive criticism of any photograph by politely rapping it!

It seems that everything about photography, and especially so-called photo-

graphic art, is largely a matter of personal opinion. And then some! Consider the thousands who have been kicked in the head by the photographic bug!

That peculiar standard of individualism is reflected in everything we do. It differentiates us from the man who lives down the street just as definitely as our handwriting differs.

Photography is a flexible medium beyond realization. Its latitudes are so great, its variations so subtle, that just in the manipulation of print-making fifty-thousand photographers may produce as many different prints from a single characteristic negative,

But that depends upon the photographers. If the fifty-thousand camera fiends were inexperienced beginners, all those prints may look alike.

Suppose the fifty-thousand photographers were experienced operators. Would you consider the prints they made as works of art? I hardly think so. Here and there you may find an exceptional print but it still isn't art. It has technical excellence only.

When just one measly negative can produce such multitudes of variations—doesn't that illustrate photography's unlimited scope?

"Well," you might ask, "What has all this to do with making pictures anyway?"

Just this—There's been a great deal of criticism from photographers in general against photographers as individuals. In other words, from people like me about people like you.

So I wish to clarify a few things for the benefit of the beginner in photography and sincerely hope he will understand my opinions are for the cultivation of a broad outlook rather than a prejudiced opinion of the other man's work. I can't hope to impress the advanced photographer because he is already set in his ways. I have to read a lot of stuff he writes, so he may as well read some of mine.

Photography is primarily a craft. As a craft it has attracted many professionals who never got beyond executing a full tonal range. Having mastered the tonal range they concentrate on getting each and every tone into the print, come what may. This is where the amateur, like you and I, may shine. When we have something to say *and* are able to do it well technically, we put to shame a print whose brilliance is based solely on print quality.

I agree with my critics that it is not the mechanics and technique of photography that make the artist. But it's a very important consideration in the final result.

Photography, through its technique is capable of blending together the visual, mental, and spiritual expression of the average man with greater ease than any other artistic medium as yet cultivated.

The painter blends his visual and mental impressions together with his technical ability. In photography this blending makes for the difference between a picture and an ordinary photograph.

The average photo-enthusiast has a long way to go before he catches up to the technique at his disposal.

SOME time ago the pages of MINICAM carried articles by Mr. Stuyvesant Peabody, and later, by Mr. Woodbury, deploring certain conditions in the photographic field. These articles convince us that a few have the courage to cry into the wilderness.

I'll put myself behind the eight-ball by classifying Darvas in the same light.

The human brain is really a peculiar hunk of stuff, so I feel justified in believing that I have a truer mental picture of the art of photography than the next man. In time I shall realize the error of my ways and henceforth will keep my trap shut, but I'm too young and ambitious, so I demand the right to make assertions.

Mr. Peabody sums up in part a prevalent attitude of photo-exhibitors by revealing that the reason we place so little consideration upon becoming artists is our willingness to allow a competitive spirit to rise above our better judgment. We become overjoyed when salon judges accept the prints we submit to them, therefore condoning our privilege to think ourselves artists because of it.

We sure do!

Along with Mr. Peabody, Mr. Woodbury seems distracted because a great majority of photographers seem to consider technique above all.

I honestly believe that as long as pho-



tography exists as a graphic reproductive process, technique must assume first consideration. A few may cultivate this technical understanding and blend it to their aesthetic nature. When that happens, the camera's basic product will blend with the personality of the individual and reveal itself as some semblance of photographic art.

Shutter-clicking is the average man's compensation for his inability to paint or draw. It places him on equal terms with the artist. But only technically! Now that he can create an image on paper he may feel a certain sense of accomplishment.

We defend and cherish the things we understand; we do not fear them. But we do fear those things which are mysterious and beyond our understanding. Photography has many complexities of the latter type. We don't like the process methods of making prints because we don't understand them. The truth is, we lack ability to produce them, so we fear them and criticize with vigor.

What difference does it make that twenty to one-hundred "Misty Mornings" hang on the salon walls at the same time? Repetition is a natural condition and more obvious with photography because of its universal appeal. Why worry about it? The awesome rate of productivity at which prints can be made, the rapidity of reoccurring salon exhibitions become other factors to consider. It taxes the normal ability to create new pictures and it is unreasonable to expect it. So what else but repetition?

Since photography has become a bed-partner of the multitudes, exactly how many of the eight thousand or so exhibitors are artists enough to create a new soul-stirring picture every time he clicks a shutter! O. K.! We don't expect him to! Let it go at that!

I've made prints that surprised me when I took them from the hypo! You know what I mean. You turn on the white light, hold that print up before your bright blue eyes and you mutter, "Boy! Ain't that something!" That probably goes for

the guy who made that "Misty Morning." As long as he doesn't consider it a work of art and in all honesty considers that picture as just another step in his development to an artistic goal I have hope for him in the future.

The purist documentarian is absolutely correct to ignore other than his basic technique if it justifies the end result. Control of the mind over the lens is photographic perfection in itself; a talent much too rare and does not need technical perfection for its portrayal.

But why razz the other extreme?

The aesthetic technician is also capable of the same quality of artistic expression as the purist. His dramatization of the common-place incident in life through the control processes can be very beautiful. One is realistic and the other generally sentimental. A human mind can appreciate both. Both schools of thought can create identical moods of pictorialism with their respective methods of working.

So why the dissension?

The pictorialist claims as much purity of application as the purist claims pictorial endeavor. What is the key to a unified understanding? Tolerance, of course! The question is; will they have the guts to get together!

Why should I be condemned to purgatory because I happen to have a bit more ability than the next? My technical means is simple proof that I can work with greater latitude than the average. So what!

If you can produce a beautiful picture with the least amount of effort as compared to some laborious effort of mine, you're just as much an artist as I am.

So why kick about technique? I have found that the ability to use control *improves* one's ability to put on sensitized paper whatever you wish to say.

Too much technique tends to interfere with pure photographic thought and stereotype the operator as one who depends more upon technique than anything else. When that happens the poor sap is automatically called a pictorialist, and any attempt on his part to get out of the



BIG BROTHER

By David Darvas

THIS picture of Darvas' children at bedtime (or did he get them up?) has been his most successful print. It has been hung in 84 salons throughout the world, and won for it's maker a great many honors. This differs from the casual snapshot of the kids as much as the Mosquito Bomber differs from the Piper-Cub.



MISTY MORNING

By David Darvas

BY HIS photo-copy process Darvas was able to improve vastly his original negative, yet retain in the print the mood of early morning along the waterfront.

pictorial class is looked upon with scorn.

No man is self-contained in one mood only. He has many moods. There are many things to say in photography, real and unreal, conscious, and unconscious. The facts surround us continually if we would open our eyes to them.

Since I claim a minor understanding and feeling for the pictorial efforts of the many factions and try to adapt their philosophy to my pictures, I have a very definite opinion as to the type of person our future photo-artist will be.

The broad field of subject matter and opinion will be his to control at will. His interpretations will not be restricted to any one line of reasoning. His camera art will contain a unity of tolerance for expressive photography as a whole, rather than partiality to a segment.

This tolerance can be cultivated today. There is no need for ridicule or unsympathetic relationships. My cry into the wilderness is for tolerance, co-operation, and understanding during this evolutionary period through which photography is passing.

The lowly snap-shot, the usual commercial picture, the record sequences of those we love, the sentimental theme, the documentary, the symbolism of our imaginations however printed on paper, are all pictorial interpretations, the visual and spiritual connecting link between our sight and mind.

Yes, photography is our common heritage of expression, and it belongs to all of us. Some day such expressionism will encompass every person on earth and the knowledge gained from it will add to the

cultural wealth of all—for photography is the Universal Art.

TECHNIQUE OF "OUR CASTLES"

A series of domestic accidents led to the making of the negative for "Our Castles." A sudden bit of sickness, a doctor's visit on this cold wintery night: a reluctant visit to the drug store to fill a prescription, and my haste to cut through a near-by ally to get out of the cold as soon as possible, all contributed to the event of the actual exposure.

Photography was a million miles away during my homeward journey, when suddenly I stopped before the most natural composition of old houses I ever saw. Everything seemed almost too good to be true. A cold clear night with a full moon. Just enough snow to lend it atmosphere and the previous snow-fall had stopped completely! What a set-up!

Ten minutes later my trusty Speed Graphic was grinding away. The exposed Panatomic Films developed in D-76 for thirty minutes yielded nice looking negatives, from which the best, a three-minute exposure at *f*22, was selected.

Two areas in the negative were obviously over-exposed. The street light and the mazda brilliancy from the window at the rear of the house had to be locally reduced with Farmer's Reducer, a fine brush in one hand, the negative in the other, and a stream of water continually at hand for constant rinsing of the local areas, for the observation necessary at intervals as the work progressed. After drying, the negative was retouched to remove an electric wire which cut diagonally across the fore-ground sky area, ex-

tending from the pole out of the picture space.

The resulting straight prints were not entirely satisfying. I sensed a need for more shadow detail. So I reached for my favorite spotting brush, a weak solution of mercuric chloride, and the weaker broad areas of the house and roof were intensified.

From this controlled negative, a very dense positive transparency was made by projecting the negative image on a sheet of 8x10 Agfa H.G.S. film, just as though one would make a print on paper. This is the first procedure in my Copy-Positive Process which I use when there is a need for balancing various mass areas of an otherwise contrasty negative.

The density of this transparency was achieved by developing it to a higher gamma than the gamma of the original negative. This was necessary in order to attain as much positive detail and tone values as the negative had when viewing it with transilluminated light.

Retouching on the transparency to emphasize detail lines, elimination of a light-pole in the distance, besides the elimination of an area of a building just behind the homes in the background completed the hand manipulation.

Handled with care because of the retouching on the transparency, it was placed on a light-box, excluding all other light except that which was needed to view the illuminated picture.

The light-box was then placed in a vertical position. The Speed Graphic on the tripod now acted the role of a copying camera. Focused sharply on the ground-glass, the image on the transparency acted as a controlled mask, or filter for the in-

"It's a lie!" he yelled

Has someone ever made a swell print from a negative that you fretfully tossed into the darkroom wastebasket?

When David Darvas appeared at the Toledo Camera Club for a lecture he had asked the boys to send him some of their worst negatives. (They're never hard to find.) He set to work on some of these cast off negatives and then confronted the members on that memorable occasion with some startling results. "It's a lie" yelled the maker of the original negative. "That's not my negative." "You're right," said Dave, "it's my print." With his process of control he rescued a half dozen duds.

tensity of the light coming through it, because, in dealing only with trans-illuminated grays, a color-blind film of medium contrast was used to rephotograph the positive with the camera. The commercial matte film used for the copy negative was developed in Agfa 125 paper developer. The color-blind nature of the film afforded working under a bright red safe-light and by visual development, the contrast of the copy negative could be controlled through routine procedures such as over or under exposure and under and over development, while further control through dilution of the developer was also possible. In this way the best normal contrast negative was selected for the final print which was on Kodabromide Papers in both contrasts of No. 2 and No. 3. The toning was Gold-Chloride Blue.

The spotting of the final prints was a relatively easy matter. The picture is hand-controlled throughout. Technically I was satisfied.

The theme of a man and his castle portrayed in the print, was really the substance of continual mental practice, searching for such a picture; looking everywhere hoping that I would find it.

The greatest thrill I have ever received during a past salon season was the selection of my picture *Our Castles* as the Gold Medal Print of the show, selected by a jury composed mainly of purists. This is the greatest compliment a controlled print could receive.

TECHNIQUE OF "BIG BROTHER"

"Big Brother" is often referred to as a processed print. Except for a little minor retouching that even a purist would tolerate, it is a straight print.

The original idea was for a different aspect of the "Refugee" theme prevalent a couple years ago.

In considering the theme, one emotion and human trait stood out stronger than the others. It was the natural inclination of human self-preservation and protection of others.

When the theme of "Protection" is applied to children, the immediate consid-

eration through continuity of thought is the protection of a child by the adult.

The next step evolved into the protection of a child by another child. The final step could be nothing else than the natural law of self-preservation: the child protecting itself.

Through step-by-step thinking of the original "Refugee theme," I had reached a point of simplification beyond which I could not go. That was the stopping-point. It was merely taking an idea and breaking it down to an elementary human understanding. This can be done with all pictures through the practice of continuous thinking.

However, to make the refugee picture, I needed authentic props to go with it. This was out of the question. But the universality of the protection-theme was not lost. It could be adapted to any story one had to tell regardless of locale or history. The fundamental story I had to tell really amounted to the protection of one child by the other. I decided to disregard a story of refugees and make a better picture of "Protection" because it was not earmarked to any environment.

From there on I was concerned with composition only.

It is natural protective-instincts that induce a person to place his arms around the other, especially with children. In my case the logical person to do that was the boy. In any other circumstances the protector would be the largest or the strongest person regardless of sex.

The composition of "Big Brother" was simplified because of just this basic element of human psychology. This also simplified the elements of design.

A relatively straight line drawn from the corners at the base of the picture, to the point of curled-up hair on the head of the boy form a triangle. Placed in the absolute center of the picture space, this is quite static but for a circular composition of outlines within that triangle. Note how the outlines of the heads, shoul-

(Continued on page 81)



OUR CASTLES

By David Darvas

ONE has but to try some night photography to appreciate the difficulties in placing a full tonal range in one print. Such luminous shadow detail doesn't usually happen—but it can be controlled. If you don't find a set-up like this, try photographing a large lump of coal and an egg. There's a fine challenge for your technical ability.



THROUGH the haze of battle smoke U. S. Marine Corps photographers surge into action on Tarawa obtaining photographic records for Naval Intelligence. The leaves of the palm trees appear to be leaning against the wind but it really was caused by the concussion of the heavy guns. The Marines have taken cover behind a coral mound that the Japs intended as a gun mount. Below—a communications “nerve center” is set up soon after the Marines land.

Official U. S. Marine Corps Photos



TRAINING COMBAT PHOTOGRAPHERS



U. S. Signal Corps Photos

FOR THE RECORD, newsreels and newspapers, for intelligence and tactical study, the Army uses expert combat photographers and motion picture cameramen.

At the Signal Corps Photographic Center, in Long Island City, N. Y., there is a fully equipped and expertly staffed Training Division which teaches soldiers the art of combat photography.

The men in the school have some civilian photographic background, and many of them were affiliated with newspapers all over the United States. In the school they are taught what pictures the Army needs and wants and how to get them under difficulties presented by battle conditions and by the elements. They are taught mechanics and the general principles involved in the care and use of

every type camera used by the Army. And, at the same time, the student photographers are taught to fight and to protect themselves from enemy action.

The course of study lasts 17 weeks. All students assigned to the Training Division, spend two weeks in a basic school where for two hours per week, they attend what is called an orientation course. In this class, they are indoctrinated with their mission on the battlefield in the prosecution of the war. The instructors, through interviews, quizzes and questionnaires, learn the background of each man. The employment record of each student is studied, as is his educational and recreational background. The information gathered by the instructors, in this way, helps them later to decide what, if any, is going to be the students specialization.



STUDENTS are thrust into real experience while on a training assignment: at the scene of an air crash—and below, shooting from a pitching tank at the Speed Graphic's fastest shutter.



SOMETHING to remember you by! Signal Corps student gets picture of the girl with whom he spent three-day pass.



During this period, the men are given brush-up courses in basic military training, such as first aid, the care and use of military equipment, gas mask and close order drills.

It must be remembered that the men in basic, will ultimately be combat photographers. They are soldiers and will be among the first to land on enemy shores. For 22 hours, the students are taught map reading. Since photographers usually go out on assignments alone or in small groups, it is imperative for them to be able to read maps, follow trails, and read a compass. To this end, the students are given field problems. They actually go out to training areas with maps and compasses and they are required to orientate themselves, find a trail and follow it to a given destination.

Into this brief space of two weeks, time is found to teach the men Army organization and military courtesy. An Army photographer must be an all-around soldier. He must know the fundamental principles and have a knowledge of every branch of Service for he travels, works, and fights with every arm of the Service.

Last, but not least, comes training in basic photography. Students are taught the mechanics, the care and use of every type of camera used by the Army. In every emergency, an Army photographer comes through because he has at least a working knowledge of all the photographic equipment which can possibly come his way. Besides the Speed Graphic, these men are given general lectures on all types of 35mm. cameras. This phase includes also motion picture cameras: the 35mm. and the 16mm. There are lectures on lenses, filters, and basic optics.

During these two weeks, the emphasis is on general photography. There is little emphasis on detail. At the conclusion of this course, and on the basis of the soldier's civilian record and talents, together with the results of an interview by two or more officers of the Training Division, each man is assigned for the remaining 15 weeks to a specialized group.

There are three fields of specialized



THIS DEMONSTRATION works fine when there is no breeze blowing sand against the wet motion picture film here being stretched on a field dryer. Behind the men is an improvised darkroom.

study, to which students may be assigned for further training. They are (1) the still school, (2) the darkroom or laboratory, (3) the motion picture school. After the basic class has been segregated into these three groups, students spend four weeks more in basic training in their particular field and then they are given 11 weeks advanced instruction.

During the next four weeks of basic instruction, the students are given problems with all types of cameras, including the miniatures. These supervised problems are designed to give the students practice in the use of the various cameras and techniques. The assignments during this phase are intended to teach students to determine correct exposure without the use of an exposure meter; to judge distance for focus, and to teach speed in handling camera equipment—these obviously being important considerations for

photographers in combat areas. Other assignments are planned to demonstrate the speed necessary to stop moving objects, and the use of a camera over obstacle courses; also the use of various types of lenses, including telephoto and wide angle.

During the latter part of this period the pictures are criticized for news and story value and for pictorial continuity. This brings the class up to a final assignment which includes a picture story suggested by each man. The story is built around a key picture and a series of supporting pictures which include variety in the picture angle, overall shots to show story setting, detail shots, activity, portraits, or anything pertinent to the subject matter.

Along with training in photography, the students during these four weeks continue their military training. Their photography assignments are planned so that they will

be required to build hasty fortifications after long marches and to make overnight bivouac. Most common weapons used by the men in photographic companies, are the carbine, the 45 calibre automatic and the Thompson submachine gun, fondly referred to as the "tommy" gun.

During this course, the men are given preliminary training in the construction and use of the field laboratory, and in the care and operation of equipment under extreme or inclement weather conditions. Tropical temperature and high temperature processing and printing, although they sound alike, present two distinct problems. In tropical weather conditions, the temperature range is usually from 80°—95° F, but the humidity is always over 70% and at times from 95%—100%; the latter during storms and hurricane weather. High temperatures, usually encountered in the desert, range from 75° to 135° F, but the air is relatively dry. This distinction is made early in the course and detailed instructions are given with regard to processing and printing under each condition.

Fortified with all these instructions, the students in the still school are then ready for the final weeks of advanced training. Each student starts out on this final lap with a complete Speed Graphic outfit which has been assigned to him for the duration of the course, and a personal locker for his equipment. The officer instructors are former newspapermen with from 10 to 20 years experience on metropolitan papers.

The students, who by this time are considered trained combat photographers, work from an assignment desk organized along the same lines as the assignment desk of any newspaper or syndicate.

The field assignments given to these students are chiefly but not exclusively of a military nature. They include the shooting of officers at various public functions, military parades, all types of maneuvers, incendiary exhibits at nearby towns, the latter giving the students practice in night photography. On request to the Training Division the students are sent within a 50-mile radius to cover pictorial stories in such restricted areas as Ports of

OFFICER instructor criticizes student negatives as they are projected on the screen. Imagine the size of a pinhole or any other defect when shown thus forcefully.



Embarkation. Halloran General Hospital, and scenes of air accidents. Twice a week, these men are sent to the Tank school at Eastview, N. Y., where they learn to work with and from tanks through hazards and obstacles. It is during these assignments that the students begin to apply their classroom knowledge of continuity and the value of story-telling pictures.

The aim of this part of the training program is not only to give the students practice in photography, but to simulate battle problems and conditions. Thus after arriving at a given destination, usually a wooded or suburban section, the men are taken on a nine-mile hike through streams and swamps, learning to protect the camera from water, shrubbery, and entangling foliage. Much attention is given to camouflage.

On these trips, the men are taught how to set up a portable laboratory unit. A canvas tent is erected and made light-proof, to use as a darkroom. Water is obtained from nearby streams. The main object of a portable laboratory being speed, the men are required to make a photographic print from a wet negative

and deliver the wet print in 15 minutes, if necessary.

Each student in the still school is required to know laboratory technique, so, although these students are mainly photographers rather than technicians, they receive darkroom training along with everything else.

Weekly, all the instructors mark the negatives taken during the week by the students on field assignments. This enables the school to keep a complete record of the photographer's work during his training period. Every negative is projected on a screen and criticized by the instructor.

All the negatives are then filed under the student's name with the name of the project, instructor, and grade.

At the end of each week, a "*Picture of the Week*" is chosen and conspicuously posted on the bulletin board together with the name of the photographer and exposure details. This coveted honor carries not only intangible prestige but a half day off for the happy soldier.

When the students have completed their 17 week training period in the still school, they are available for assignment as pho-

A CLASS from the Signal Corps Photographic Center, on the march during outdoor maneuvers. Note diversity of equipment and how it is carried.



tographers (1) with mobile Army units in the field; (2) to training film production units; (3) special photographic units.

Although all the men in the photographic school receive basic training in developing and printing, some are selected after the first two weeks to specialize in the laboratory and are, therefore, given a 15-week course in darkroom work. The emphasis here is, of course, developing, contact printing and enlarging. The students are taught to make photographic and photostatic copies of maps, text matter, charts, and photographs. They are taught to run identification cameras and to follow through with the development of the 100 foot rolls of motion picture film used in these cameras. Some time is devoted to retouching negatives. They study photographic chemistry and the various uses for preparations needed in photography. These students, too, are given field training. They are sent into the field to set up portable laboratory units where they are required to work in temperature as high as 130° and as low as 35°.

Into the third field of specialization, the motion picture school, are sent a group of carefully selected students. All the students in the school receive the same basic training for the first two weeks. The students who are selected for the motion picture specialization spend the third week in orientation and lectures on the fundamentals of pictorial continuity and on the mechanics, operation and maintenance of the cameras used by the Army.

This takes them into the fourth week and the beginning of actual shooting. For the first three days the students are given cameras but no film. Under the supervision of an instructor they do what is called in Army parlance, dry shooting. The students concentrate on panning and formulating sequences of long shots, medium shots, and close-ups. They practice handling the camera and equipment quickly under pressure and unusual conditions. The following three days, although the instructor remains with the class and the scenes are the same simple set-ups, the cameras are loaded.



Acme Photo from 12th Air Force

During the fifth week the students are given simple, controlled stories to photograph under supervision; a controlled story being one in which the action may be repeated, if necessary. All the films shot are criticized by the instructor who points out to the class the strong and weak points in the picture and then grades it.



ASSIGNMENT IN TEHERAN—a grey day on the portico of the Russian Embassy as the Big Three sit for the world's big moment. Alone, of all men, the combat photographer orders them. "Look this way," he says. "Now, once more; with your cigar, Mr. Churchill." Combat photography means news pictures as well as actual scenes of warfare.

The following week, the assignments remain on the same simple, controlled level but the students work without supervision from the assignment desk. The assignment desk of the school is organized and

run like the desk of any commercial news-reel company.

For the first three days of the seventh week the students are again given a series of lectures. This time on 16mm. photog-



WITH PRIDE "The Picture Of The Week" is tacked up where it will be on exhibit for a week.

raphy and the use of Kodachrome. The latter part of the week is spent in putting into practice the material presented previously in lectures. The assignments are either more difficult controlled stories, or easy uncontrolled stories.

At this point the students are grouped into crews, consisting of four enlisted men with an officer in charge. This officer facilitates the handling of assignments and arrangements. He does not shoot or direct. After he tells the cameramen what is expected of them, they go ahead with the assignment which is later screened, criticized, and graded. During this time each student is required to execute entirely on his own an individual assignment, the first of a series of three. Each man handles the entire assignment, making the contact, determining the time and shooting schedule, the amount of film required, and the size of the crew.

The second individual assignment is due at the beginning of the ninth week. The men remain in the same crews and continue to work from the assignment desk. The crews are sent to cover real news stories, the same that are covered by the commercial newsreels and many others. During this week the students begin to cut and to edit their own films. This phase of the training is designed to give the cameramen a working knowledge of the

mechanics involved in the operation of cutting machines and splicing. This experience gives them a greater appreciation of the problems that confront the cutters and editors, and brings to the attention of the cameramen the importance of covering a story completely and thoroughly.

At the beginning of the tenth week new crews are formed. The object of changing the personnel of the crews is to prevent a group from becoming so accustomed to each other that it would be difficult for the individual members to work with other crews. The crews continue to report to the assignment desk for the day's schedule. The desk endeavors to send the advanced crews out on military assignments, such as stories in Mitchell Field, and the various camps and forts in and about the New York area. When the military objectives have been exhausted, then the assignment desk sends crews to cover civilian activities. The students are given complete instructions as to deportment when dealing with civilian groups and individuals, also as to forbidden subjects and subject matter. The men during this period continue to edit and cut their own film which is screened, criticized and graded. The third and final individual assignment is also turned in for screening and grading.

For the last weeks of the course, the students continue with the same routine but the crews are constantly changed.

During the entire course of study the students are required twice a week to attend showings of the newsreels made by the 5 major commercial companies. Once a week the entire school, both still and motion picture is addressed by a war correspondent just returned from overseas duty. At this lecture the students are permitted to ask questions and have a round-table discussion.

At the end of the course, these fully trained combat photographers are given a five-day furlough.* When they return, they are ready for assignment to photographic units or companies going on overseas duty.

From "The Chemistry of Photography," published by Mallinckrodt Chemical Works.

THE CHEMISTRY OF PHOTOGRAPHY

THE CHEMISTRY OF DEVELOPMENT

When the sensitive emulsions of films, plates, or papers are exposed to light, the silver compounds (Silver Bromide, Chloride and Iodide) very quickly undergo a chemical change. There is a difference of opinion as to what action takes place. It is certain, however, that there is a tendency toward reduction to metallic silver. Where light intensity is strongest, this tendency toward reduction to silver metal is more pronounced. All modern processes of photography depend upon this tendency remaining in the emulsion after exposure, and the fact that it can be carried further by chemical means until complete reduction to metallic silver is accomplished.

A developing bath merely continues this reduction to free silver metal in the emulsion. Some chemical is used that has the power of liberating free silver from its salts; such substances are commonly known as reducing agents.

There are any number of reducing agents, but most of them are too powerful as developing agents, because they reduce all the silver compounds in the emulsion, without regard for the latent image already formed there by exposure. In other words, a reducing agent that is satisfactory as a developer must be selective. It must confine its action to the exposed silver salts and leave the unexposed surface unaffected. It must also be capable of control in the speed with which it reacts.

There are very few reducing agents that are delicate enough in their action to do this. Pyro, Hydroquinone and, Pictol* (Metol) are the most commonly used developers today. They are both selective and controllable in their action.

It is characteristic of reducing agents to combine freely and easily with oxygen. In fact, a reducing agent could not act as a developing agent were it not for this property. However, most developers in use today are neutral or slightly acid in their normal condition, and in this state do not readily combine with oxygen. In other words, they develop very slowly if at all when used just as they are.

The sodium salts of the common developers, however, combine very readily with oxygen. Hence, in general practice an alkaline sodium salt is added, such as Sodium Carbonate, which forms the desired sodium salt of the developer used and also makes the solution alkaline. Alkali in the solution makes the gelatin of the emulsion swell up and permits the developing agent to reach the silver salts imbedded there, reducing them to metallic silver. The speed of development, therefore, increases with the amount of Sodium Carbonate used and also produces greater contrast in the negatives and prints.

*Trade Mark, Reg. U. S. Patent Office.

Potassium Carbonate or caustic alkalis (Sodium or Potassium Hydroxide) may be used instead of Sodium Carbonate, but not as satisfactorily because they are not uniform in strength and the caustic alkalis are too strong, softening the gelatin and frilling and blistering the prints and negatives, especially in warm weather. As the energy of the developing bath depends entirely upon the quantity of alkali present, if the alkali is too strong the developer becomes so active that it decomposes the silver salts on the entire surface of the emulsion, producing very bad fog.

As too much alkali reduces the silver all over the surface of the emulsion, some substance must be used to prevent complete reduction by the developing agent. In other words, the developing agent must be restrained and made selective so that it will not reduce the silver salt on the unexposed surface.

The addition of a little soluble bromide such as Potassium Bromide or Ammonium Bromide produces this effect. It increases the selectivity of the developer and at the same time larger amounts of carbonate may be added to increase the speed of the developer. While it is not definitely known, the restraining power of Potassium or Ammonium Bromide is believed to be due to the formation in the unexposed emulsion of a double bromide silver salt which is not so easily reduced by the developer.

So far, a developing solution must contain a reducing agent (developer); an alkali to permit its action; and a restrainer to prevent too energetic development in the unexposed parts. In general practice, this means one or more of the developers: Pyro, Hydroquinone, Metol; together with the alkali Sodium Carbonate; and the restrainer Potassium Bromide. A solution containing only these ingredients, however, does not keep very long. All reducing agents are greedy for oxygen and rapidly take up the oxygen dissolved in the water from the air, forming oxidation products that color the solution. If negatives and prints are developed in a solution that is badly discolored, they become stained.

It so happens that Sodium Sulfite has an even greater affinity for oxygen than any of the developing agents. Consequently, a small amount of this chemical added to the developing solution protects the developer by taking up the oxygen into itself and forming Sodium Sulfate. In other words, Sodium Sulfite takes no active part in the developing action, but acts as a preservative of the developing agents.

In stock solution developers, preservatives other than Sodium Sulfite may be used, such as bisulfites and metabisulfites of sodium or potassium. They are particularly useful as preservatives in a Pyro developer because they are acid sulfites. As Pyro is more readily oxidized in an alkaline solution

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than any of the other developers, the acidity of the bisulfite is more effective than Sodium Sulfite, which is an alkaline salt.

In one-solution developers, Sodium Bisulfite is rarely used as a preservative with other developers because it is an acid sulfite, and neutralizes part of the carbonate (alkali) in the developing solution. This lessens the energy of the developer unless more carbonate is added to compensate for this extra acid.

Developers keep in an acid solution better than they do in one that is alkaline, so it is common practice to use one of the acid sulfites in two-solution developers, dissolving the developer and acid sulfite in one stock solution and the alkali in the other.

THE CHEMISTRY OF FIXATION

The developing solution completes the reduction of the silver salts started by light. The unexposed silver compounds, however, are left unchanged. The principal purpose of a fixing bath is to remove all this unreduced silver on negatives and prints and thereby stop any further reduction to silver metal by the developing agents carried over from the developing bath. Silver compounds, not acted on by light or developer, are readily soluble in a solution of Sodium Thiosulfate, commonly called "Hypo." This chemical, therefore, is the most important ingredient in a fixing bath.

A plain fresh Hypo solution works well in cool weather for a time, but does not remain efficient very long. After a short time the reaction of the chemicals brought over from the developing bath into the Hypo solution, stains the prints and negatives fixed in it.

In general practice, all developing solutions are alkaline and may contain more than one kind of developer. These ingredients are brought over as impurities into the fixing bath with the negatives and prints, and some means must be provided to prevent them from contaminating the solution. If this precaution is not taken, they interfere with proper washing out of the unreduced silver and may cause stain and fog.

As a developing agent does not reduce silver salts except in an alkaline solution, and as the purpose of a fixing bath is to stop all development, an acid is added to neutralize the alkali. This is generally accomplished with Acetic Acid. Acetic Acid added to a Hypo solution, however, turns the bath milky. The Hypo decomposes into free sulfur and Sodium Sulfite. Fortunately this chemical action is reversible, since a solution of sulfur and Sodium Sulfite combine to form Sodium Hyposulfite again upon boiling. This being the case, an excess of Sodium Sulfite is maintained in the fixing bath to oppose the decomposition of the Hypo by the acid. In this way it is possible to add sufficient acid to the fixing bath to neutralize all the alkali carried over into it, without decomposing the Hypo.

This excess of Sodium Sulfite also prevents oxidation of the developing agents carried over into the fixing bath. It acts as a preservative by absorbing the oxygen dissolved in the solution from the air, before it reacts on the developers. If the sulfite did not perform this function, it would be necessary to employ something else, because an oxidized developer colors the solution, staining the prints and negatives.

All possible sources of trouble in the fixing bath are taken care of excepting excessive softening and swelling of the gelatin of the negatives and prints, caused by soaking in the solution of the developing and fixing baths. Some substance, therefore, should be used to harden the surface of the gelatin to prevent this. As white Potassium Alum has the property of tanning the gelatin, this chemical is added to a fixing bath as a hardener.

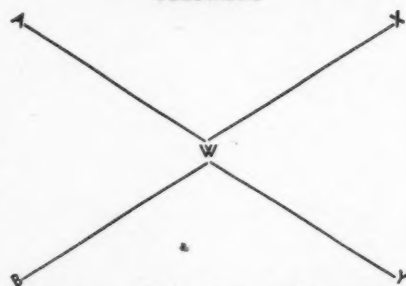
Potassium Chrome Alum has a greater hardening effect on the gelatin than ordinary white Alum. For this reason it is generally used in a fixing bath for films and plates in hot weather. Sodium Sulfite is also used here as a preservative, but Sulfuric Acid or an acid salt such as Sodium Bisulfite is employed to supply the acid instead of Acetic Acid.

While the purpose of an acid in a fixing bath is to stop development and neutralize all alkali brought over from the developing solution, in time, all the acid is used up and the fixing bath precipitates aluminum sulfite. Such a condition also allows the developer to oxidize and stain the prints. To prevent this and prolong the life of the fixing bath, it is best to use an acid "short stop" bath between the developing and fixing solutions.

The simplest "short stop" that can be used is a 1 1/2% solution of Acetic Acid. This should be kept up to strength by the addition of small amounts of 28% Acetic Acid from time to time.

(To make 28% Acetic Acid from Glacial Acetic Acid, dilute three parts of Glacial Acetic Acid with 8 parts of water.)

SIMPLE FORMULA FOR DILUTING SOLUTIONS



A simple method for diluting solutions is by the criss cross method. Place at A the percentage

strength of the solution to be diluted and at B the percentage strength of the solution you wish to dilute with (in the case of water, this will be O). Place at W the percentage strength desired. Now subtract W from A and place at Y. Also subtract B from W and place at X. If you take X parts of A and Y parts of B and mix, you will have a solution of the desired strength W.

For example:

To dilute Glacial Acetic Acid to 28%.



Take 28 parts 99% Acid and 72 parts of water.
(For calculations of this nature Glacial Acetic Acid may be considered 100%.)

ADDING CORRECT AMOUNT OF BROMIDE

A great many formulas call for a saturated stock solution of Potassium Bromide. Here, however, is a great possibility of error because the quantity of Potassium Bromide required to make a saturated solution depends entirely upon the temperature. More can be dissolved at high temperatures than at low temperatures. This means the strength of the solution changes with the temperature because more and more Potassium Bromide will crystallize out as the weather gets cooler.

To eliminate this source of error we suggest preparing a 10% stock solution by taking one ounce of Potassium Bromide and dissolving it in enough water to make 10 ounces in all.

A 10% solution does not contain enough Potassium Bromide to have it affected by changes in temperature, so that its strength is always the same.

The following proportions should be used:

Ten drops equal one grain of Potassium Bromide.

TEMPERATURE CONTROL

Temperature control is most important in development and fixing baths, and in the mixing of the chemicals that make up these two solutions.

From the developing standpoint, too high a temperature produces frilling and fogging. The

speed of development also increases so that the energy of the reducing agent is so strong that it reduces the silver salts on the entire surface of the emulsion, producing fog.

In a developing solution containing two or more developing agents, extreme temperature affects one agent more than the other. For example, in a Hydroquinone-metol developer, at a low temperature, the action of the Hydroquinone is slowed up to a much greater extent than the Metol. As a result the developing solution acts as if it contained an excess of Metol. On the other hand, at a high temperature, the action of the Hydroquinone is increased beyond that of Metol, and the situation is reversed.

In the mixing of a developing solution, warm water always makes the chemicals dissolve more easily. It is best, however, to do this at as low a temperature as possible. If very hot water is used in preparing the developing bath, oxidation of the developing agents may result and the solution colors, giving stain. Warm water, not over 125° F., may be used without danger. A developing bath prepared with warm water should never be used until it has cooled down to normal (65° F. 70° F.).

The maintenance of a moderate temperature in the mixing of a fixing bath is even more important than in the preparation of the developing solution. While a plain Hypo solution is easily prepared without danger of decomposition from relatively high temperatures, the acid-hardening solution should not be added at a temperature in excess of 85° F. Higher temperatures cause the solution to turn milky, due to the formation of free sulfur from the decomposition of the Hypo.

The safest method of preparing a fixing bath is to mix the acid-hardener separate from the Hypo solution and then mix after both have cooled to normal room temperature.

A general rule for temperature control in both the preparation and operation of developing and fixing bath solutions is:

DEVELOPING SOLUTION

Preparation

Never in excess of 125° F.

Operation

Normal room temperature, 65° to 70° F.

FIXING BATH

Preparation

- Hypo solution not in excess of 125° F.
- Acid-hardener not in excess of 125° F.
- Mixing the Hypo and Acid-hardener solution not in excess of 85° F.

Operation

Normal room temperature, 65° to 70° F.

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COMMON DEVELOPING SOLUTION TROUBLES

Result	Cause				
	Too High Temperature	Too Much Carbonate (Alkali)	Too Much Sulfite	Too Little Sulfite	Omission of Potassium Bromide
Fogging		Too much alkali increases the reducing power of the developer to such an extent that the silver salts are decomposed all over the surface of the emulsion.			The purpose of this chemical is to prevent reduction of silver on those parts of the sensitive emulsion which have not been affected by light. It acts as a restrainer on the developer.
Colored Developing Solutions	Developing agents are relatively unstable salts. Increased temperatures will cause them to absorb oxygen too rapidly. Keep temperatures of solutions when mixing not over 125° F.	Too much carbonate increases the energy of the developing agent to such an extent that it absorbs oxygen more rapidly, even in the presence of sulfite.		Insufficient preservative causes rapid oxidation of the developer, resulting in colored solutions and stained prints.	
Precipitation Or Suspended Matter			Only a small portion of the sulfite should be dissolved before adding PICTOL, or dissolving the PICTOL first, then adding sulfite immediately.		
Frilling or Blistering	Soaking causes a natural swelling of the gelatin. The longer it is continued, or the higher the temperature, the more pronounced this condition will be.	It is a natural property of carbonate to soften gelatin. Too large quantity will cause this action to be accentuated.			
Solution Does Not Develop	Solutions that do not develop may be caused either by (a) lack of carbonate in the solution, or (b) lack of developing agent.				

Improper Mixing: Most published formulas list the chemicals in the order in which they should be dissolved. Remember these four cardinal rules for mixing a developing solution:

The alkali (carbonate) should never be dissolved with the developing agent before the preservative (sulfite) is added. The preservative inhibits the natural affinity of the developer for oxygen, while the alkali increases it. Colored developing solutions and stained negatives and prints will result. This is why the alkaline solution is kept separate from the developing agent in a stock solution formula.

The preservative should be dissolved before the developing agent. This, as before mentioned, is to prevent the oxidation of the developer. Even in the case of metol*, it is general practice to dissolve a little sulfite before adding the metol. Care should be taken not to dissolve too much otherwise, the relatively high concentration of the sulfite will convert the metol into an insoluble compound, and that much of it will be lost.

Never add a second chemical to a solution until the first one has been completely dissolved.

Excessive quantities of calcium salts react with the sulfite and carbonate in the developing solution forming insoluble calcium sulfite and calcium carbonate.

* Also known as PICTOL or ELON.

COMMON FIXING BATH TROUBLES

Cause Result	Improper Washing (Too Much or Too Little)	Too Little Sulphite	Insufficient Acid	Excess Acid	Insufficient Alum
Staining of Prints	(Too Little) Washing eliminates most of the developer and alkali brought over from the developing solution. This prolongs the life of the fixing bath by conserving the acid and sulphite placed in it to counteract these impurities.	If insufficient sulphite is present, there is no preservative to prevent oxygen in the air from decomposing the developing agent brought over from the developing solution. Too little sulphite will also cause the fixing bath to turn milky.			
Swelling or Softening of Gelatin	(Too Much) In warm weather, particularly, too much immersion in solutions causes swelling and blistering of gelatin. A short-stop bath containing Alum will help to overcome this condition.		Excessive alkali softens the gelatin materially, hence a fixing bath should contain acid to neutralize the alkali brought over from the developing solution. Too little acid also permits development of the image in the fixing bath.		Particularly in hot weather, the lack of alum causes swelling and blistering in a short time. In such weather, it is advisable to use a Chrome Alum hardening solution between developing and fixing baths.
Milkiness of Fixing Bath		Lack of this preservative permits decomposition of the Hypo by the acid, forming free sulfur. Sulfite is gradually oxidized into sulfate by oxygen from the air, so an excess is always maintained.	If the milkiness disappears on standing for a few hours, and then precipitates in the form of a sludge, too little acid is probably the cause. Without acid, sulfite and alum form insoluble aluminum sulfite.	Excessive acid decomposes the Hypo, precipitating free sulfur.	
Bath Does Not Harden				With a given quantity of alum, hardening properties of a fixing bath increase as the quantity of acid is increased, or excessive temperature by hardening point. Beyond this, the hardener is less efficient.	The sole purpose of this ingredient is to alter the surface of the gelatin. It counteracts long soaking and excessive temperature by hardening the surface of the emulsion.

A worn-out or weak solution of Hypo causes more trouble than any other one thing in the fixing process.

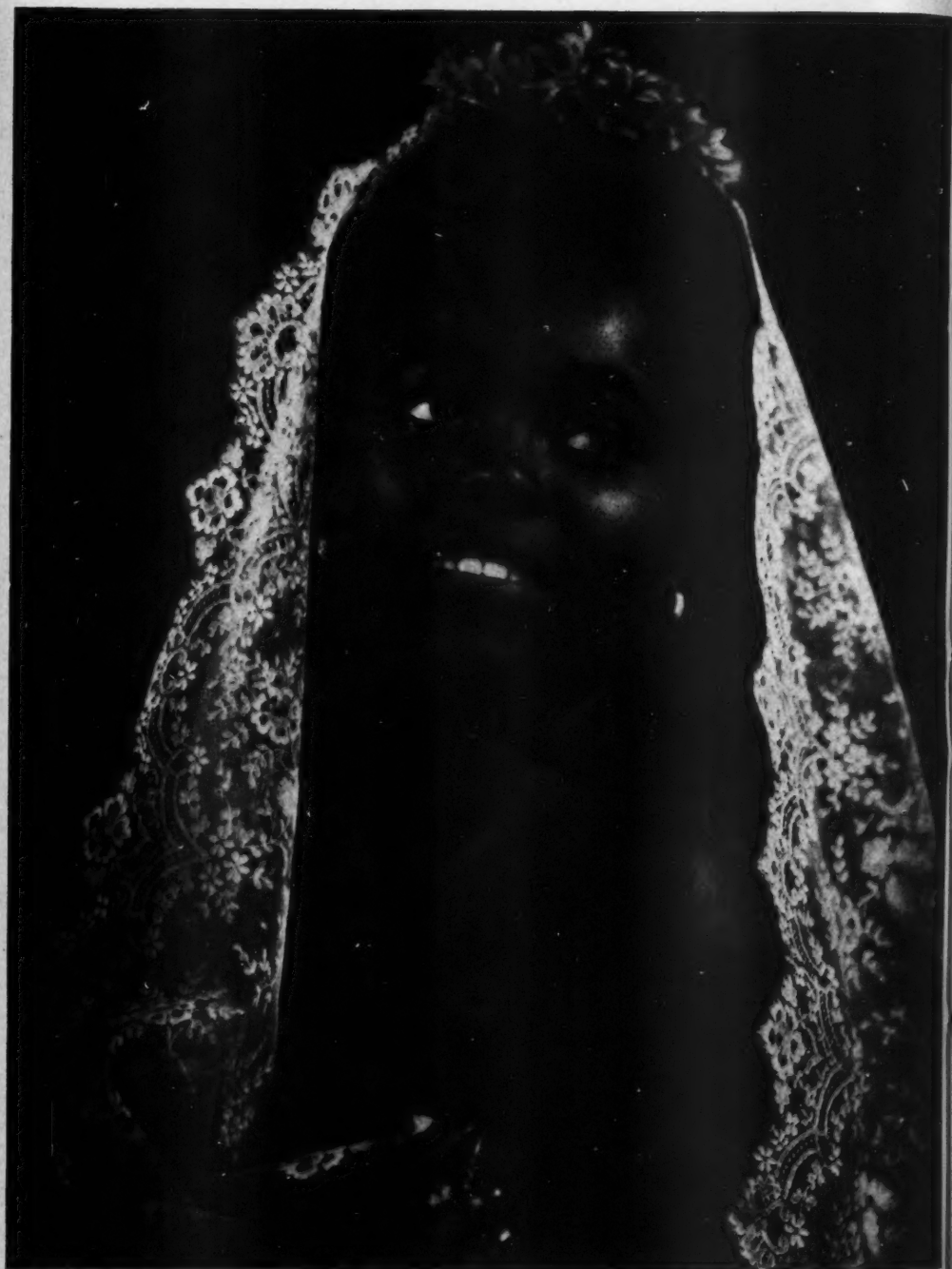
Improper Mixing: As free acid decomposes Hypo into free sulfur, the two cannot be mixed together when preparing a fixing solution. Sulfite prevents this reaction, so sulfite and acid are mixed and alum is then added. After the acid-hardening solution is prepared, it is cooled to room temperature before adding to the cold Hypo Solution.

It is important, when preparing an acid-hardening solution, not to mix sulfite and alum before adding acid. In the absence of acid, alum and sulfite react forming aluminum sulfite which precipitates in the form of a white sludge.

If a fixing bath formula includes Sodium Metabisulfite or Sodium Bisulfite (acid sulfite) instead of Sodium Sulfite and Acetic Acid, it is equally important to prepare the acid-hardening solution separate from the Hypo solution and add the two together after they have cooled to normal temperature of not over 85° F.

At a temperature over 85° F., the acid in a fixing bath becomes more active and acts as if it were present in excess. In other words, it decomposes the Hypo into free sulfur and the solution has to be thrown away.

Scum on Surface of Bath: Most likely to occur after solution has stood for some time. May be due to impure chemicals, dirt, etc., which float on the surface or stay in suspension in the solution; also by hydrogen sulfide gas dissolved in the water forming a silver sulfide layer on the surface.



GEORGIA BELLE

Dorothy De Lain Wagner

MRS. DOROTHY DE LAIN WAGNER, A.R.P.S., of Freeport, Illinois, does not own a camera and never has owned one, and yet in the past three years she has become one of the best known salon exhibitors in the United States. Her prints have an individuality that make both her work and her name well known to all who follow salon exhibiting. Many of her prints are reproduced in photographic magazines and numerous salon catalogs have used her prints to illustrate the highest quality of work their salons exhibit. Mrs. Wagner has seen only one photographic salon and

that was in 1940 at the Rockford, Illinois, International Salon, in which the first print she had ever submitted to a salon was hung.

Her one and only salon visit still puzzles her as it was called the "Rockford International." I couldn't understand how an International Salon could be held in Rockford, figuring there was only one International Show a year and that it should have been held in New York or Chicago." Her knowledge of photographic salons increased rapidly, however, and she sent one more entry to a salon in 1940 and had one more print accepted. But she had made a

The Lady from Freeport

By STUYVESANT PEABODY

HARRY HERLIN, President of the Freeport Camera Club, made this caricature of the club's best-known member, Dorothy De Lain Wagner, making a salon print.



beginning and in the 1941-42 Salon Year she had 51 prints accepted in 22 salons and in the year that closed last July 1 she had 91 prints hung in 35 salons. She has sent to only two salons that did not hang a print—one was an American and one a Canadian salon.

Mrs. Wagner was born in Gainesville, Florida, at the turn of the century and her father, John Witherspoon McDowall, moved his family, soon after she was born, to Newberry, Florida, where he and her maternal grandfather, Mr. G. D. Younglove, of Illinois, owned and operated some phosphate mines. Newberry was at the end of the railroad line which had been extended south just to serve these mines. There were no schools near the mines and the only inhabitants were the negro miners and their families. Mrs. Wagner and her brothers had these negro children for playmates whenever they could escape from their governess. Moving back to Gainesville when she was ten, she started school there and continued until the tragic death of her mother in an automobile accident.

After her mother's death she was sent to St. Joseph's Convent in St. Augustine, where, she says: "I studied art and as little else as I could—in fact, so little that my father finally sent me to a finishing school in South Carolina. I was past seventeen by that time and I so hated school that my father let me return home in the middle of the year. The following summer I visited in Illinois and married there a childhood playmate. (Her husband died in 1918 and Mrs. Wagner was left with two daughters, Barbara and Pauline.)

"I don't know how I ever had the nerve to do it for I was as green as a gourd, but in 1919 I went to work for a photographic studio in Freeport. I could not sell a dozen photographs for four dollars a dozen, and so I was kept in the darkroom. For several years I developed, mounted prints and spotted them. Although I have been working at it for 18 years my work has only once taken me into the camera room. That was soon after I started work, when I knew little or nothing about photography. My boss and his wife had to attend a conven-

tion and left me in charge. I had never made a picture and how I even knew you had to focus a camera to make one, I can't remember now. But soon after the bosses left I went into the studio and piled all the toys on a chair and pointed the camera at them and worked at it until I had all the toys sharp. Just as I finished doing this the biggest man I have ever seen walked into the studio and wanted his picture taken. We used some daylight at that time and I placed him between two windows, one north and the other west, getting a beautiful line lighting down both cheeks and plenty of shadow in the center of the face. I also noticed afterward that the feet were somewhat fuzzy.

"After the sitting I looked up developer formulas and then on the shelves to see what chemicals we had. I found a formula and chemicals that went together and developed my negatives, and, believe it or not, I had fairly good shots, so I made proofs (I had done that before) and sent them to my bosses. They couldn't believe their eyes. To make a long story short, I made 21 sittings while they were away and all ordered but two. Now one of these was of two little girls that just would not behave, and I'd given them each a piece of candy in a paper cup and they were holding these cups out as though I was photographing the candy and not the children. I never could understand why their mother objected. Too bad, though. She was an old sweetheart of the boss's and she never came back. And that ended my work in the camera room."

About 15 years ago the studio artist became sick and Mrs. Wagner had to take over the hand-coloring work of which the studio had a great quantity. She found this easy and pleasant as she had enjoyed working with color more than any other work in the studio. She also taught herself to retouch—"And from my first attempts with worm-eaten faces I advanced to a point where I could show a face so completely smoothed out as to be absolutely devoid of character; but I still held my job and the studio prospered, is still in business and enjoys a very fine reputation,



LITTLE SHEAR-CROPPER

Dorothy De Lain Wagner

but I don't see yet how it survived my early efforts."

Mrs. Wagner's art training led her in the twenties to start, on the side, a parchment lamp shade business and a special shellacked shade of her own design that she had developed. This was so successful that she had five girls working for her and it continued until the shades became commercialized and the chain stores were selling them. Her daughters also had been making Mexican subjects in water color and had quite a little business of their own until this fad vanished.

Mrs. Wagner studied art in the early thirties for several years at Rockford College under M. E. Reitzel and exhibited her paintings at the All-Illinois, Beloit College and the Burpee Art Gallery at Rockford, but she could not pass the Chicago Art Institute Juries. The failure to gain admittance at Chicago so discouraged her that she began looking for some other hobby. Mr. Hale of the Burpee Art Galleries told her of an International Photographic Salon coming up in 1940 at Rockford and asked her why, as she was working in a photographic studio, she did not try



PAUSE FOR APPLAUSE

Dorothy De Lain Wagner

to get a print in it. He said it was a hard show to make.

"I had never taken photography seriously. After working at it for 18 years I should have been an expert but my work had kept me in the darkroom and the portraits that passed through my hands day after day and year after year never interested or excited me. But Mr. Hale had started me thinking. I looked into the studio after hours, saw the camera clicked easily, the lights were gay, and I decided I would see what was behind it all. I thought over subject matter—still life, humorous subjects, children, beautiful girls, nudes—all the things we dream of in art classes. Nothing seemed to get me and then I remembered I had always wanted to paint a negro girl in a bridal veil. My daughter had been married six months before in white. I found a promising model, made six shots of her and "Dark Victory" was the result. This picture is not a masterpiece but it did make the Rockford International and I was started. If it had failed I probably would never have made an-

other shot. It was that success I needed to spur me on. I continued to work with colored people. I seem to understand them and find so much more interest and fun in working with them."

Mrs. Wagner gets great fun from her salon exhibiting and to her it is a sport and a fascinating game. She never studies the juries to see what type of print they like or whether they have accepted or rejected certain prints. She keeps no records and ships to as many salons as she can find time during her busy days to make prints. She prefers seeing how many different prints she can get in the salons to seeing how many salons she can get four prints in. "If I could afford it and had the time," she says, "I would ship four different prints to each salon."

She has to make her prints after her routine printing is finished and as she has so little time for her salon work she must get as perfect a negative as possible, as she has no time for experimenting or toning. "After running off my prints after the studio printing is done, I mount and spot

them during lunch hour, label and title them with one hand while I am holding the telephone with the other and I usually get them off about one day before closing dates."

She carefully explained that she did not want anyone to think she had never touched a camera until "Dark Victory" was made. "I had made pictures of my children but so seldom I always had to figure out each time how you used a camera. I have never studied a textbook on photography, owned a camera or done anything about acquiring a photographic education, for which I am perfectly ashamed.

"I hear people talk about big shots in the photographic world. I meet so few of them in Freeport and I have never had time to leave here much. I have made some wonderful friends through my photography and I think the pictorialists are warmer in their friendships and more willing to help others than any other group of people I have ever been associated with."

In 1933 her Aunt Dolly, who she says has always been a Fairy Godmother, gave her a piece of land on Cedar Creek a few

miles north of Freeport, a part of the original Jane Adams' Homestead. Here Mrs. Wagner and her aunt now live as both her daughters are married and have their own homes. The cottage is of Italian design and fits beautifully on the side of the ravine over Cedar Creek blending well with the natural beauty of the surrounding country. Mrs. Wagner designed the cottage herself.

In the past few months she has had a number of invitations to act as print critic and address several of the leading Chicago Camera Clubs. She is so completely modest and retiring that the thought of speaking before a group of "experts" overwhelms her. "What little success I have had is due to nothing in the world but a few good negatives. I am a wise gal to stay right here in Freeport.

"When I think of the nerve I had in applying for an Associateship in the Royal Photographic Society, I wonder how I ever came to do it. They sent me a blank to fill out and return with 12 of my prints to London. I filled it out but then I had only 9 salon pictures so I sent these over.

(Continued on page 82)

MRS. WAGNER and two of her models, as photographed by "Jack" Peabody, who sent in the subrosa report that "she makes it worth going to Freeport." Mrs. Wagner writes us: "I think every picture I make is approximately the same exposure, all being indoor shots. I use normal papers and am very partial to fully timed, rich prints. I am going to go 'process' mad some day, but am very happy right now, just trying for good prints."





A WOMAN'S TOUCH

By HANS KADEN

"This picture is a table top; it was taken in my basement. Here is the true story: One day I came upon an old large painting, one of those impressionistic things done about 100 years ago. The paint was cracked all over. What struck me was the pinkish hue of the painting and I thought that if it would be photographed with panchromatic film it would make a delicate high key picture. My next thought was that it would give the impression I had often in Upper Bavaria, looking through a window from one of those very picturesque mountain inns with the simple curtains and the flower pots on the sill and the hazy mountains in the far distance.

"Ten minutes later, in our basement, I was draping up a window. I placed the painting

three feet in back of the window and gave it a lighting from both sides. To simulate the sunlight I placed a strong spot outside, using the shadows in the painting as a guide. Inside a weak fill-in light was used for bringing out the details in the flower pot and in the vase. I focused, of course, on the flower pot, stopping down just enough to suppress details in the painting. The exposure was $\frac{1}{2}$ second at F8 on Plus X film. Getting the right depth of field was essential.

"At f3.5 the whole painting would have blurred out, leaving a window looking into a sea of mud, and at f32 the whole affair would have been so sharp that you could put your finger on the cracks in the painting.—H. Kaden.



By RUS ARNOLD

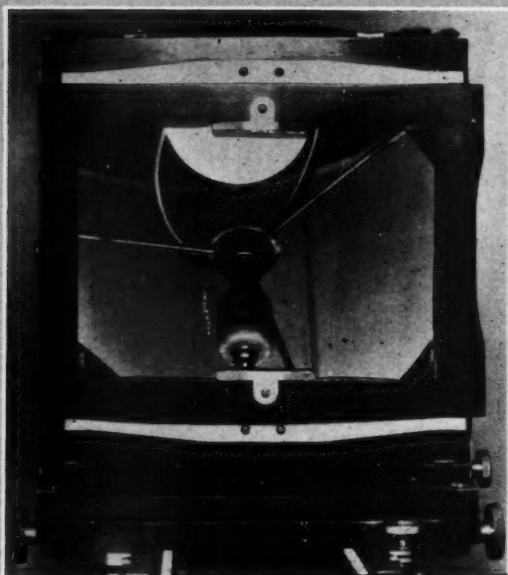
TO UNDERSTAND depth of field you will have to look at it. So I'll wait while you get your camera and set it up on a tripod, looking obliquely down at a lighted table lamp no more than two feet away.

The camera should be one with a ground-glass, and capable of focussing that close. If you do not have such a camera, run down to your nearest friendly dealer or professional photographer and ask for the use of a suitable camera for a few minutes. It wouldn't hurt him to look over your shoulder either, as few photographers understand what depth of

field is all about, and how to use it.

If you do not have a suitable camera available, and cannot borrow one, you may stand on tiptoe and lean over my shoulder and see what the ground glass of my camera will reveal about depth of field.

With the camera set up as shown, open the shutter, and make sure the diaphragm is wide open. Now focus at the center knob of the lamp—the “finial” that keeps the lamp shade in place. Get it sharp. If you are close enough and the lens is wide open, the near and far edges of the lamp shade will be out of focus.



"Step a little closer and look over my shoulder at the inverted image of the ground glass of my View Camera, says Rus Arnold. "The depth of field changes as you look."

Looking around the rim of the lamp shade you can see how the sharpness drops off to fuzziness.

Now watch the ground glass as you rack the lens forward. You can see the sharp area creep forward until the near edge of the lamp shade is sharp, but the center knob is now out of focus.

Still watching the ground glass, rack the lens backward. The near edge of the lamp shade will go out of focus and the center knob sharp again. Soon the center knob will be out of focus and the far side will be sharp.

What we have been doing is nothing mysterious; we have been focusing a camera. But stop a bit. What we have been doing can also be considered as moving an area of sharpness back and forth over the area being photographed.

That area of sharpness, which we could place where we wanted it, was the depth of field.

Let's try something else. Focus sharply on the center-knob, so that the knob is in the middle of our sharpness-area or

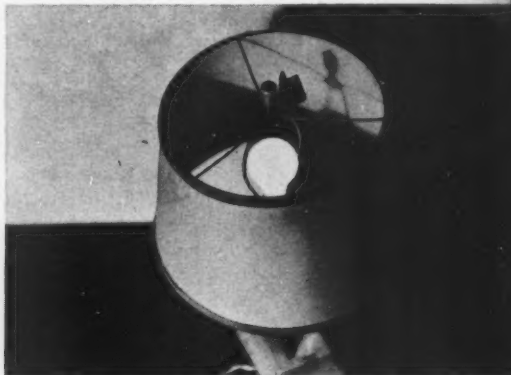
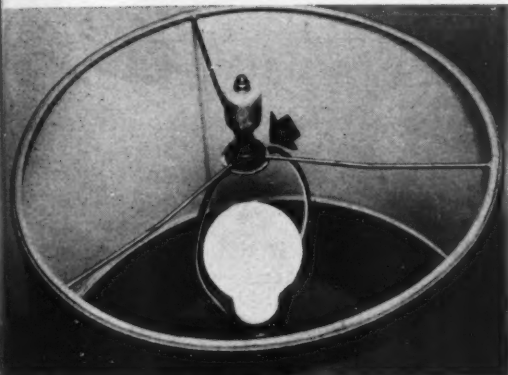
depth of field. Move the camera backward a foot or so at a time, each time stopping to refocus so that the center-knob is always sharp. When you start, the near and far edges of the lamp shade are, of course, out of focus. But soon you arrive at a distance from the lamp at which, without doing anything except focussing on the center knob, you get near and far edges of the lamp equally sharp.

What has happened? Well, the further the camera is away from the subject, everything else being equal, the more depth of field you have. So one way of getting more depth is to get further away; one way of getting less depth is to get closer in.

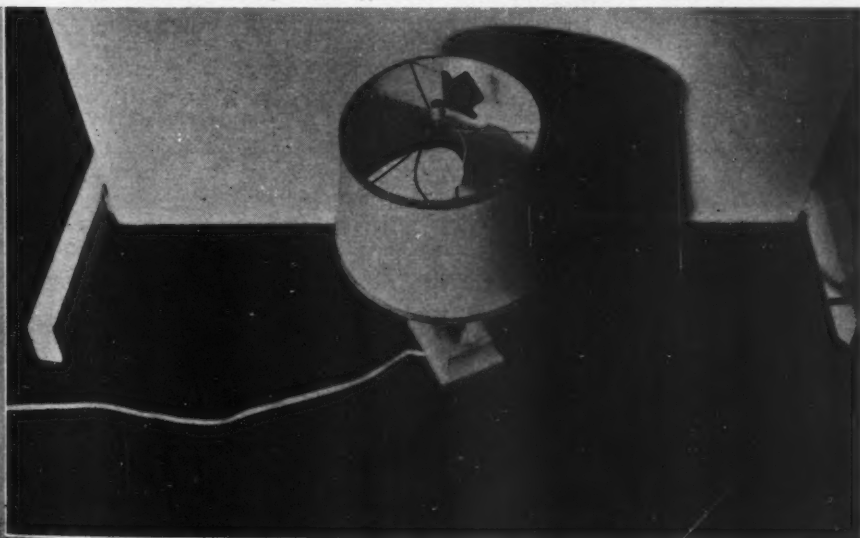
Let's get back now, to our starting position. Focus on the center knob. Once again the knob is sharp, the near and far edges out of focus. Without moving the camera, slowly close down the diaphragm. The image will get dimmer, but since the lamp is lit there will be enough light to see that as you close down the diaphragm,



THESE PICTURES illustrate how you make a small area come sharp with its surrounding area blurred. **LEFT**, camera is focussed on center of lamp (see arrow) with lens open ($f/4.5$), at two feet. Note near and far edges of lamp shade are thrown out of focus. **CENTER**, lens still at $f/4.5$, camera focussed at near edge of lamp shade, putting center and far edge out of focus. **RIGHT**, focussing on far edge of lamp shade at $f/4.5$, making center and near edge out of focus.



SAME AS TOP LEFT, but with lens stopped down to $f/32$. Note near and far edges now brought into focus. For picture at **RIGHT**, camera was moved back to 4 feet; lens $f/4.5$. Compare depth of field with top left, taken with same lens at same opening. **BELOW**, using wide angle lens, camera is 2 feet away. This type lens includes greater area, more of which comes sharp.



the sharpness area (remember, that's the depth of field) creeps forward and back until gradually the near and far edges of the lamp shade become as sharp as the center knob.

Again, what's happened? Well, the smaller the diaphragm opening of a lens, all other things being equal, the more depth of field it has. So one way of getting more depth is to close down the diaphragm; one way of getting less depth is to open the diaphragm wider.

Still another little experiment, this time presupposing we have either two lenses of different focal length, or a supplementary close-up attachment to the lens we're using. With the camera in our starting position, about three feet from the lamp, lens wide open, focus on the center knob. Again the near and far edges of the lamp shade are out of focus. Now close the diaphragm down until both edges just become sharp. Make note of the aperture; perhaps it's f16. Replace the lens with a longer focus lens or slip on a close-up attachment. Open wide, focus sharp on the center knob of the lamp, then close down to the same f stop as on the previous lens; f16 in our case. The near and far edges of the lamp shade are NOT sharp.

Why? Because all other things being equal, the longer the focal length, the less the depth of field. One way to get more depth is to use a shorter focal length lens; one way to get less depth is to use a longer focal length lens.

Before we remove the long-focal length lens, try again. You may find that you can close the diaphragm down to the point where front and rear edges of the lamp shade will be sharp, but that will be at a much smaller stop than with the other lens—perhaps at f64.

There is another way to control depth of field, but that is not available to most of us. It involves tilting the back of the camera or the lens board, but few cameras are equipped to do this. If you have such a camera, try tilting the lens board or ground glass back, whichever has the adjustment, so that the two are no longer

parallel. You will readily see how, without changing diaphragm opening, distance from camera to subject, or focal length of lens, you can get more depth. That's the value of this adjustment, but usually it makes a camera too cumbersome and too expensive, and the same result can be obtained in other ways.

More important, there is another way to get LESS depth. Let's say you're using a small camera with a short-focal length lens: a Leica with 2" lens, or a Rolleiflex with 3" lens. You're standing at 8 feet because you can't get any closer and get everything in. It's a very sunny day and you can't open up any wider than f11. How can you get LESS depth of field if you should want it (and don't say you never want it, because we might change your mind for you a little further down).

Well, let's look back at our ground glass, with its image of the lamp shade. We're 2 feet away, with the lens focussed on the center knob. It's sharp, but we want (for some reason) to be sure the far edge of the lamp shade is out of focus. But suppose we find that a good exposure requires a diaphragm opening of f16; what do we do about it?

Watching the ground glass, with the lens stopped down to f16, rack the lens slowly forward. Amazing! Gradually the far edge becomes out of focus, while the center knob is still sharp. What happened? We placed the to-be-sharp part of our subject matter at the far end of our too-deep depth of field. How? By focussing in FRONT of it, instead of AT it. Similarly we could throw the foreground out of focus by focussing BEHIND what is to be sharp, and then stopping down. Try that, and you'll see.

Okay, so now we understand that depth of field refers to a narrower or wider area of sharpness that we can control in three ways: by distance from camera, width of diaphragm opening, or focal length of lens, or by any combination of these. We also know that we needn't have our center of interest in the center of our depth of field if that makes things sharp

(Continued on page 76)

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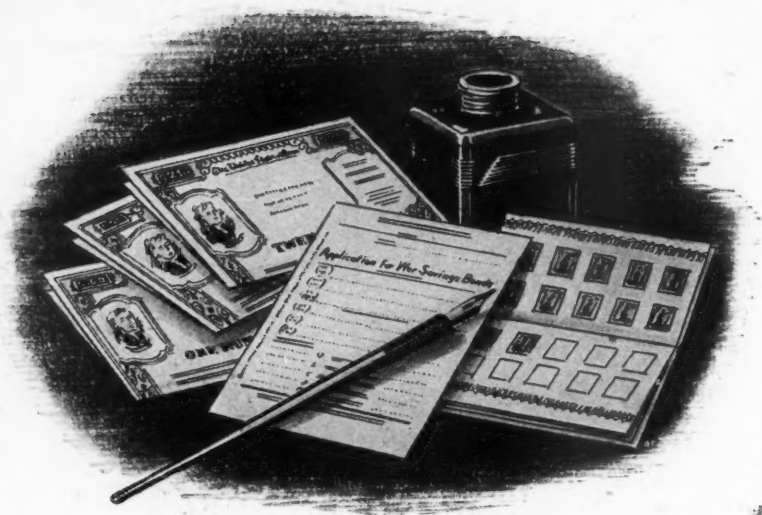
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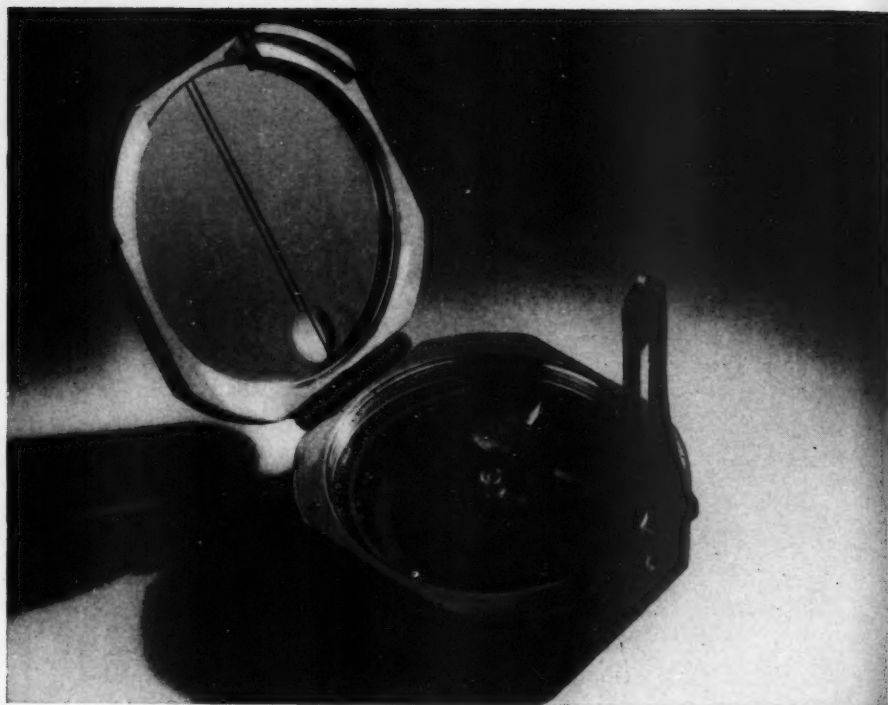
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SALONS AND EXHIBITS

★ Follows P.S.A. Recommended Practices

Closing Date Exhibit to see	Name of Salon	For Entry Blank, Write to	Number of Prints and Entry Fee		Dates Open to Public
	★Ninth Annual Des Moines International Salon of Photography.				Hall of Pho- tography, West Fourth Street at Keosauqua Way, Des Moines, Iowa, Jan. 1-22, 1944
Exhibit to see	27th Annual International Salon of Photography.				Los Angeles County Museum, Exposition Park, Los Angeles, Calif., Jan. 1-31, 1944
Exhibit to see	★Sixth Annual Springfield International Salon of Photography.				The George Walter Vincent Smith Art Gallery, Springfield, Mass., Jan. 5-26, 1944
January 6	★Eleventh Wilmington In- ternational Salon of Pho- tography.	Miss Bertha Fenimore, Salon Secre- tary, 517 Essex Ave., Bellemoor, Wilmington, Dela.	4	\$1.00	Galleries of the Wilmington So- ciety of Fine Arts or the Hotel DuPont, Wil- mington, Dela., Feb. 7-20, 1944
January 15	★Second Annual Montreal All-Canadian Salon of Photography.	Mr. Donn Boring, Salon Secretary, Montreal Amateur Photographers' Club, 1441 Drummond Street, Montreal, P. Q.	4	\$1.00	Museum of Fine Arts, Montreal, Feb. 1-15, 1944
January 22	★1944 Oklahoma Inter- national Salon of Pho- tography.	U. Joseph Brown, Sec'y., P. O. Box 1619, Oklahoma City 1, Okla.	4	\$1.00	Art Center of the Oklahoma City Municipal Auditorium, Oklahoma City, Okla., Feb. 6-20, 1944
January 31	10th Rochester Inter- national Salon of Pho- tography.	Rochester International Salon, P. O. Box 106, Rochester, N. Y.	4	\$1.00	Rochester Memorial Art Gallery, Rochester, N.Y., Feb. 25-April 2, 1944
February 2	★Philadelphia Interna- tional Salon of Pho- tography, 1944.	J. S. Bradford, 245 South 45th Street, Philadelphia 4, Pa.	4	\$1.00	Gallery of the Free Library of Philadelphia, Feb. 19-Mar. 12, 1944
February 10	★Seventh Annual National Salon.	W. H. Hudson, Salon Chairman, Camera Club of Rhode Island, 103 Westminster St., Providence, R. I.	4	\$1.00	Museum of Art of the School of Design, Providence, R.I. Feb. 22-Mar. 7, 1944
February 26	31st Annual International Pittsburgh Salon of Pho- tographic Art.	Simon Zecha, Secretary, 637 Chis- lett St., Pittsburgh 6, Pa.	4	\$1.00	Art Galleries of the Carnegie Institute, Pittsburgh, Pa., March-April, 1944
March 1	★Fourth St. Louis Interna- tional Salon of Pho- tography.	W. E. Chase, St. Louis International Salon, Room 500, Missouri Pacific Bldg., St. Louis 1, Mo.	4	\$1.00	City Art Museum, Forest Park, St. Louis, Mo., Mar. 18-April 3, 1944
March 8	★Fourth Paducah Interna- tional Salon of Pho- tography.	E. Earl Curtis, Box 203, Paducah, Kentucky.	4	\$1.00	Main Ball Room, Hotel Irvin Cobb, Broadway at Sixth Street, Paducah, Ky., Mar. 26-April 1, 1944
April 15	★Fifth Toledo Internation- al Salon.	Ley. F. Powers, Salon Chairman, Toledo Camera Club, 4450 Ver- maas Ave., Toledo 12, Ohio.	4	\$1.00	Toledo Museum of Art, Toledo, Ohio, May 7-31, 1944



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Sir:

I have you to thank for a visit which I made to Birch-Field, Wednesday night. While I had first satisfied myself that his achievement was mathematically possible, and had even ventured on two predictions which were verified, (1) that cheap lenses would give him better results than good ones, (2) that films of the chrome type would be better than those of the fine-grain type, it was startling to see the miracle performed before my own eyes. His most remarkable picture was a movie of an American flag. Though the film was black and white it came out in brilliant red, white, and blue. Almost as

remarkable was a Castle travel film, in which flowers came out in their original colors. I said to him it would be simply paralyzing to think what he could do with transparencies of the Brady Civil War pictures, for we shall be able, among other things, to see the color of Abraham Lincoln's eyes!

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• For more about the almost unbelievable experiments of Birch Field, see February. A free reprint about his experiment (October, 1943) is available to readers who missed this issue —Ed.

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Experimental Exercises

(Continued from page 27)

simple modelling of the face. Another was directed from behind the subject to create the line lighting on the left side of his head. A third spot from behind illuminated the smoke. The camera was about twenty feet from the subject where he fit into the area, marked off for this purpose, on the groundglass. The two negatives were then processed, taped together and printed in the usual manner.

Step three is a combination of the straight negative and a photogram. Again, there is no intentional symbolism. The image was projected on the easel and objects were placed directly on the enlarging paper. The little red filter of the enlarger was used so that proper placement of the objects could be effected. I worked with hollow glass balls and parts of a broken one to create the abstract shapes. The basic exposure for the print was ten seconds. A slight amount of "burning in" was done to the clock, so that there wouldn't be too much attention centered upon it.

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MONTAGE WITH TWO-WAY PHOTOGRAM

THE third exercise is the one of the plaster torso of a female. For the sake of discussion I shall refer to her as, "Venus". In the first step, "Venus" was illuminated by three lights. One 500 Watt spot created the modelling on her right side, and another formed the line light of the back. One flood served to fill-in the shadow areas and round out the modelling of the figure.

Step two was evolved in the spirit of polite deviltry, with the idea of titling this gay little number "Venus in the role of a fan dancer." I used the technique of the photogram. The glass spheres were placed directly on the enlarging paper to give the effect of bubbles, and fine feathers were placed in the negative carrier right on top of the negative of "Venus" to give the effect of a fan. The photogram was made partially by direct contact with the paper and by projection. The exposure for the photogram was fifteen seconds, and the torso was given an additional fifteen seconds of "burning in".

Some of you will prefer the simple, direct photographs to the more complicated ones. You may say, "Why spoil a nice clear-cut statement with a lot of technical sauce?" I think the answer lies in the fact that most of the so-called clear-cut statements are the result of an evolution of countless experiments, countless attempts that have ended up against a stone wall. Your personal feeling is important, and in this type of work the attitude of the experimentalist must be adopted. I want to touch the creative sphere of new forms and images. This is the spark of motivation and the reason for going ahead; actually, it is one of the most electrifying forces and a reason for being.

CAMERA CLUB MEMBERS have been up nights listening to the advice of the following well-known photographers—Harvey Falk, G. G. Granger, Don Lowing, Rowena Fruth, Harry Shigeta, B. Gray Warner, Axel Bahnsen, Barbara Green, P. H. Oelman, Dr. D. J. Ruzicka, Samuel Gottscho, Martin Polk, James H. Thomas, Wm. C. Bowman, J. P. Krimke, Edward Noel and probably many more.

Classes in Philadelphia

Sir:

The Miniature Camera Club of Philadelphia is still going strong. Last year the school, run together with the Photographic Society of Philadelphia, was so popular it will be repeated this year, January to May. With such instructors as Al. de Lardi on color, Small on lenses, Sam Langston on paper negatives, Barrows and Hogan on prints, with J. Ghislain Lootens to put on the finishing touches, another fine batch of photographers should result.

One October meeting was combined with the P. S. of A. to listen to Mr. Axel Bahnsen tell us all about the future of photography. One most discouraging remark might bear repeating. It was that, in spite of the marvelous advances in equipment and products, if we want to make fine pictures we still will have to think. It will be tough for us brownie-minded fans.

At another meeting Bob Barrows tried to solve the riddle of Salon Judges vs. Public. A jury of experts (well, de Lardi, Hogan, Kaden, etc., ought to be experts) selected the five best prints from a traveling show. Then the rest of us voted with pieces of paper for the five best prints according to each one's likes. These votes were counted and checked against the experts.

Four of the five chosen by the jury met with good popular approval but the fifth, a pattern shot, received just two votes and was well panned by us, without very successful rebuttal. On the other hand, twenty-six of us picked a high-key head, which the jury turned down flat and with ample reason and not much return fight from the rest of us.

Anyhow, none of the selections was unanimous, which probably brings us back to where we came in—have faith in yourself and see all the good prints you can.

J. F. McGONIGAL

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Play the Field

(Continued from page 68)

that we want unsharp; we can move it to the far edge to throw the background out of focus, or move it to the near edge to throw the foreground out of focus.

Of course not all of us have ground glass cameras on which we can check these effects when we shoot pictures; and even those of us who do, cannot always stop to do that. For this purpose depth-of-field tables have been compiled, and will be published in February. Some cameras, such as the Contax, Leica and Rolleiflex, have them engraved on the focusing knob or around the lens, where they are convenient to use.

Now that we have this information, what are we going to do with it? Is it of any use to us? We'll take some examples, and see.

First we want to make a picture of a photographer in his studio, at work. He is very close to us; looking past him we can see his models. We want everything sharp. How can we do this? One way would be to get further back, to get increased depth of field. This is often satisfactory. We may prefer to remain close so that he looms large in the foreground. Instead of getting further back, we might change to a shorter focal length lens—maybe even a wide angle lens. That's how those trick effects are achieved that you may have wondered at: the distant landscape seen through the arch of a horse's legs, a traffic cop's face through the circle of his hands on his motorcycle handles, and so on. And then of course there is the third method, which you will want to use anyway: stopping down the lens to a sufficiently small aperture. Indoors this is possible with flashbulbs or on subjects permitting long time exposures.

What if the background is a "busy"

pattern of leaves, or chicken-wire, or people's faces? Get them sharp, and you spoil the picture. What if you want to get the effect of space, and things going off into the distance? The best way to do these things is to have everything behind your center of interest go out of focus.

How? You tell me. That's right—get closer in, or use a longer focal length lens, or open to a wider diaphragm, or use a combination of these methods. Or, if you can't do that, focus in **FRONT** of your subject a little way; trial and error will tell you how far.

Finally, we want to take a picture of that photographer and his model, but we merely want to **SUGGEST** him, and concentrate on her. He is to be in the foreground. But if he's sharp, he will dominate the picture. We must have him out of focus. Or we want to shoot through a rain-spattered window, and want the hazy, dreamy effect of out-of-focus foreground. Or perhaps there's a fence or bars in the way, as will happen at the zoo or on the farm. We can make this foreground out of focus 4 ways; using a longer focus lens, or by getting closer, or by opening up the lens, or by focusing in **BACK** of the subject.

Can we carry this sort of thing to extremes? We certainly can, and it comes in handy. Want to take a zoo picture that looks as if there were no bars in the foreground? Use the absolute minimum of depth, and if you're careful not to stick the lens right up against a fence post the bars will be **SO** out of focus that they will not even show at all.

So there we are. Depth of field is as useful a gadget as anything you can make out of wood, metal, or rubber—and it doesn't involve a shortage of materials. Master it—and if you want to make sure you've mastered it, assign yourself to take one subject and photograph it from the same general viewpoint for different effects: (1) maximum depth, (2) focussed on center but with minimum depth, (3) focussed on foreground only, and finally (4) focussed on background only. It's an education and it works!

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Photography Grows In Brooklyn

Sir:

As part of its curriculum for the Spring Term, starting February 1, The Art School of the Brooklyn Museum has announced that a course devoted exclusively to the increasingly popular techniques of Bromoil and Bromoil Transfer will be given by Hugo P. Rudinger. Helene Sanders will repeat her course in Portraiture, while Herman de Wetter will continue to present his classes in Fundamentals of Photography and in Pictorialism and Advanced Techniques.

All courses are held once a week from 7:30 to 9:30 in the evening. For catalogue address the Art School of the Brooklyn Museum, Eastern Parkway, Brooklyn 17, New York.

HERMAN DE WETTER...

Greenwich Fair

Sir:

The Greenwich Village open-air show held every Spring and Fall was started during the depression, and lay artists who could not "make" the galleries hang their works on walls and fences and sell them.

Some better known artists help out by hanging their works on the local palings, too.

The casual, picturesque air of the sidewalk salon appeals to the visitors, who sometimes sit for a quick sketch. People are too intent on watching the artists to notice a mere camerawoman. Children, as usual, were the most spry subjects for my Rollei.

MARY LOWBER TIERS

New York City



CONTROL YOURSELVES

(Concluded from page 42)

ders, arms, and hands repeat themselves and overlap in a circular direction.

It is interesting to note that the composition outlined above became apparent during the time the subjects were placed together. It is simple because it was natural.

The children who are my son and daughter had just completed their daily bath. The boy's hair being damp could be combed to stay-put into an upward curl.

The expressions on the faces were compelled through suggestion towards the boy with a story of a "poor little puppy who injured its paw," while a darn good bawling out kept my daughter frightened enough to remain so during six exposures within five minutes.

The lighting, a T-20 500-Watt projection bulb placed about 3 inches from the side of the lens on a Speed Graphic was the source of general illumination. A No. 2 photoflood on a pale-green background placed 3 feet behind the subjects made the exposure image a semi-silhouette. The exposure on Panatomic film at $f/8$ at $1/25$ th second was developed in DK-50 for about 40 minutes.

The negative was reduced with ferricyanide to simplify printing of dark corners. Pencil work on a piece of ground-glass to which the negative was backed helped to balance the halo of light behind the boy's head. A little retouching to eliminate a shadow cast by the boy's nose completed the hand-work on the negative.

The print on Kodabromide G contrast No. 3 was developed in Agfa 125. Toning in Nelson's Gold and spotting completed the picture.

Constant thoughts of a mind for a single objective finally come out into the light. We may never know exactly why we made certain pictures, but if we think back, we may find some hidden past influence we had long forgotten as the primary influence that showed us that light.



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THE LADY FROM FREEPORT

(Continued from page 63)

I received another letter saying I had to have twelve pictures to be considered and while I was making three new ones to send them, I received a cable one morning that read—"I have the honor to inform you that you have been admitted to the associateship in the Royal Photographic Society. Congratulations." Well, I kept reading it over and over for a while before I could believe my eyes and then I just sat down and cried."

The Royal Photographic Society states the associateship is granted in recognition of proficiency of a high order in practical photography. That photography is essentially a recording medium and its records must be of a high technical excellence if they are to have any value.

Those familiar with today's salon photography all know Mrs. Wagner's delightful prints and do not wonder at the A.R.P.S. she can now add to the modest signature with which she signs them.

She recently wrote me:

"The strongest conviction I have after three years of Salon exhibiting, is that every pictorialist who is really interested in his work should find a new approach, a new technique, every few years if he expects his work to remain refreshing to his followers.

"Is someone going to ask me now, 'How to do this?' Your guess is as good as mine, but I know it can be done—we found one path in the beginning, and we look and find another.

"For three years I've concentrated on the only thing I felt at all capable of doing. Portraits, and usually of colored people. I have tried to photograph moods rather than faces. I've used my lights and shadows to exaggerate that mood, following no rules but my own, playing with my materials, keeping simplicity ever before me. Rules are good for some people—for very particular people, very timid people; but they wreck me.

"It is so very easy to place your subject and work with your lights until you see before you the thing your mind has already created. I play with the lights, the folds in the simple white blouse my dark skinned girl may be wearing, ever watchful of the delightful pattern and composition these shadows and high-lights form. Watch for these simple things, they are most valuable and do you great credit when successfully used.

"I think every picture I make is approximately the same exposure, all being indoor shots. I use normal papers and am very partial to fully timed, rich prints. I am going to go 'process' mad some day, but am very happy right now, just trying for good prints.

"Before long I shall be very weary of what I'm doing, so then I'll dream up something new. Perhaps things more dramatic, stronger lights, deeper shadows, entirely different type subjects. I don't know now, just what. Might even go down in the Ozarks and dig for gold. . ."



"Sir, today I am a P. S. A."

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CAMERA CLUB

NEWS AND IDEAS

TWO CAMERA CLUB programs, in spite of all, run true to form over the holidays. One, the Annual Christmas Party, the other the exhibition of photographic Christmas Cards. It's now time for those New Years Resolutions. Are you doing your part to help your hard-working officers? Have you been responsible for an interesting club program? Did you finally take those film spools and film pack tins back to your dealer? Have you planned that illustrated article for MINICAM? Did you show those guys what an improved picture you made as a result of that last club criticism? Best Wishes for an interesting, instructive, and congenial Camera Club Year.

That wide-awake bunch at the CHICAGO AREA COLOR CAMERA CLUB has pulled another out of the hat. A recent circular from them outlines a series of lectures on "Theory and Dynamics of Composition" by the Acting Dean of the School of the Art Institute, Hubert Ropp. The first lecture on January 20, will cover the subject of "Mechanical Aspects of Composition and Space Dimension—Dynamics," and the second of the series of two will be on February 17, "The Theory of Special Recession and Color Relation." Tickets may be obtained from George W. Vanden, 620 N. Michigan, Chicago, Ill.

CLEVELAND PHOTOGRAPHIC SOCIETY has something new and thought provoking on their 1944 schedule. They will interchange a set of prints with GENERAL HOSPITAL, CAMP DEVINS, MASS., where overseas boys returning to the human side of life will enjoy photography again. A hospital circuit of shows could be arranged for other hospitals too, by other Camera Clubs. How about it, soldiers of Photography?

RECENT ACTION by the CHICAGO CAMERA CLUB ASSOCIATION and the Chicago Historical Society in incorporating a salon association assures Chicago a single annual salon of top quality. This action is an example of the value of cooperation in avoiding duplicate effort in connection with photographic exhibits. At first, both of these organizations sponsored an annual Chicago Salon (and Chicago, for many years without a major salon, suddenly found itself with two at the same time). Then the two organizations joined hands for the 1943 Chicago Salon and found the arrangement so efficient that the Salon Association was formed to manage the 1944 Salon and future exhibits. This corporation is controlled by a board of three directors, one each from the two organizations and the third representing other photographic interests. Stuyvesant Peabody is chairman of the board.

THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA has awarded its silver medal to Charles Heller and Hans Kaden for distinguished service under fire. On behalf of the PHOTOGRAPHIC SOCIETY and the MINATURE CAMERA CLUB, Heller and Kaden last year conducted an advanced instruction class in photography, with 17 members serving as instructors, and 43 amateurs attending 23 sessions.

Some of the Columbus (Ohio) pictorialists have banded together and rented rooms in the Grand Theatre Building where a studio has been set up. They intend holding open shooting sessions once a month and anyone interested may participate. There will be models, plenty of lighting equipment, and assistance from some of the more advanced workers.

THE COLOR DIVISION of the P. S. A. announces a color slide competition to begin in February.

The competition will extend thru the months February, March, April, May, and June, 1944, with deadlines being the 15th of each month. Each club may enter ten slides each month (no more than four from any one member). The entry fee for the five months will be \$4 for P. S. A. clubs, \$5 for non-P. S. A. clubs.

Slides will be judged on a point system by projection. There will be club and individual prizes each month and similar prizes for the series. Score sheets, including comments on slides submitted, will be sent to participating clubs each month.

For rules and entry forms, write to Blanche Kolarik, 2824 S. Central Park, Chicago 23, Illinois.

HEARD "thru the darkroom door" Cleveland's Errol Butchart, the expert on the technical side of photography; "The best way to avoid those dense negatives that are so hard to print is not to pull the slide when making the exposure. I recently made 11 exposures of a subject, and by following this procedure, obtained 11 of the clearest negatives you can imagine."

THE ST. LOUIS CAMERA CLUB may be the oldest club operating in greater St. Louis, but it is very young in spirit. It's officers are: Paul Pratte, President; E. C. Collins, Vice President; John L. Pratt, Secretary; Richard Ramming, Treasurer; Dr. J. S. Waldmann, Membership Chairman, and G. B. Telfair, Publicity Chairman.

A COURSE in photography will be given by members of the TOLEDO CAMERA CLUB lasting through the winter months. The classes will consist of a wide variety of lectures and demonstrations on fundamentals. The course is open to anyone, some of the members will probably take it as a refresher. There are many clubs engaged in this activity thruout the United States and we think it is one of the very best contributions that a camera club can make.

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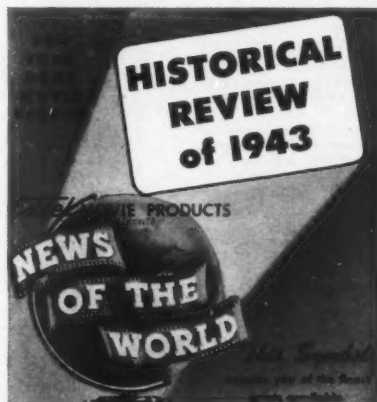
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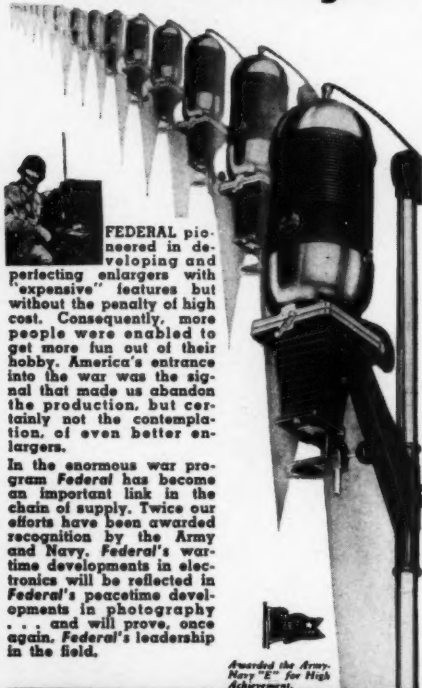
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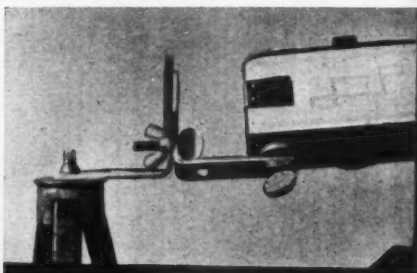
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GADGETS, KINKS AND SHORT CUTS

We pay from \$1 to \$5 for any Gadget, Kink, or Short Cut accepted by this column.

Tripod Tilt-top

AN INEXPENSIVE tripod tilt-top can be made from two angle brackets with 1/4 inch holes, two 1/4 inch wing bolts, two 1/4 inch wing nuts, and one washer (optional). If the bolt



that fits into the tripod is too long, it may be cut off; or if no metal cutting saw is available, the washer can be inserted.—Herman Klein.

Negative and Print Writing Ink

INK THAT will write on negatives or prints can be compounded from the following chemicals:

Potassium Iodide	2 oz.
Iodine	90 gr.
Gum Arabic	90 gr.
Water	6 oz.

This solution bleaches out the image so that writing on the negative will be clear and thus print black. Prints written on directly with the ink, will be white.

In writing on greeting cards or announcements, such as the birth of a baby, additions can be made to the negative if black writing is desired. In the case of silhouettes this is attractive. Remember to write so that the message is not backwards on the print.

Individual signatures can be autographed on prints. Measurements or arrows may be placed on technical pictures for study or submission, or identification of scenes or persons. When writing on glossy paper the paper should be damp for best results.

Copy Support

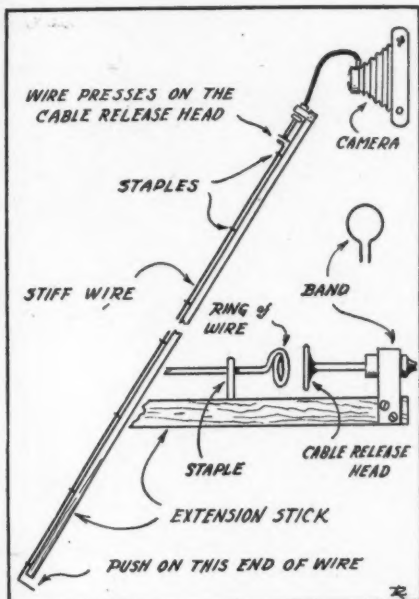
TRIANGULAR gummed corners, sold for holding photos in albums, can also be used to hold material to be copied.

They are inexpensive and the same corners can be used repeatedly, after the adhesive quality is gone, by attaching them to the copy board with cellulose tape. In the case of large photos tape is necessary.—H. Klein.

Emergency Attachment for Self Portraiture

IF YOUR CAMERA is not adapted for self portraiture, you can use this stunt to make an extension for the cable release.

Secure a piece of "lattice" about 4 ft. long, for the base, and drive several wire staples about 10 in. apart. At one end of the stick fasten at right angles, a band of metal that can be clamped tightly around the cable release ferrule. Then insert a piece of stiff galvanized telephone wire through the staples;



and twist one end into a small ring that will bear against the cable release button.

In use, focus on the point of action and get camera and lights ready, then take your place. Hold the stick in your free hand, out of range of the camera, and when ready press the end of the wire. This pushes the cable release button and trips the shutter.—L. B. Robbins.

Fix It With Clear Nail Polish

TO REPAIR CRACKS in bakelite or rubber tanks, mix a little lamp black with clear nail polish. Insert it in the crack and then apply two coats of the polish to the outside surfaces of the mended items.

To repair chips in porcelain trays, clean the exposed metal thoroughly and apply several coats of the polish, making sure that each coat is dry, before the next is applied.

Chipped paint on enlargers, cameras, etc., may be replaced with nail polish to prevent corrosion.

Chromium or other metal surfaces will not rust or tarnish if covered occasionally with nail polish.—Gregory J. Siragusa.



Send For These Super-Dooper Bass Bargains:

- 50mm. Leitz Elmar F:3.5 coupled for Leica Cameras, list \$70.40 each, **\$ 57.50**
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- 9x12 Linhof Standard fitted with 15 cm. Carl Zeiss Tessar F:4.5, Compur A, 3 holders, FPA..... **\$125.00**
- 9x12 DeFranne dbl. ext. Trioplan F:4.5 in Compur B, FPA and holders..... **\$149.50**
- 9x12 Voigtlander Avus dbl. ext., Skopar F:4.5 in Compur A, FPA, holders Marshall Transmission..... **\$ 57.50**
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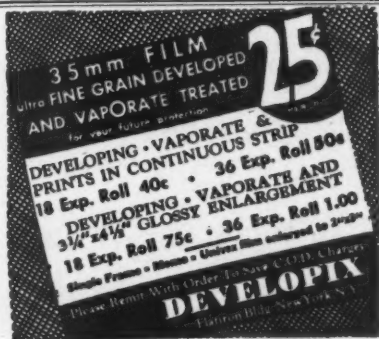
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Developer Count

PASTE a sheet from a calendar on the developer bottle and circle the date on which it was made up fresh. As it is used, mark a dash on the date. If the developer is used twice in one day, make two marks on that date. The number of times the developer has been used may be ascertained by totaling the number of marks.—Herman Klein.



Accessories in a Nutshell

THE MOST USED accessories can be fitted into a little cosmetic bag or tobacco pouch and the space inside the sunshade will accommodate a homemade filter box.



The inside of the filter box is fitted with "extension file" pockets made out of linen.



To make filter pockets, cut a strip of linen about 1/8 inch wider than diameter of discs, and iron into alternate folds. To form pockets, iron "Press-on" tape (available at dime stores) in narrow, previously folded strips over sides of pairs of folds. This will result in pockets arranged like the spokes of a wheel and open at the hub. Provide for short free ends for later fastening.

(To page 89)

Arrange completed "file" into neat stack, grasp firmly and cut off enough at each corner so that file will fit into box comfortably. Tie pockets loosely at bottom by drawing fairly stiff thread close to corners. Then fasten short free ends with adhesive or scotch tape to top and bottom of filter box. This box $\frac{1}{2}$ inch high with six pockets, will accommodate 4 discs when closed.

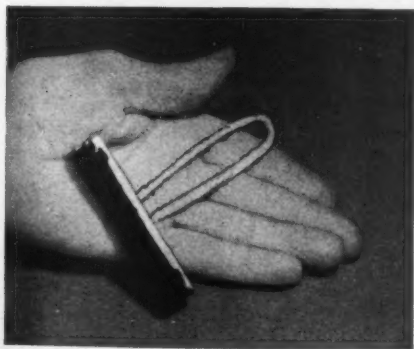


To prevent scratching the inside of the sunshade, cover the filter box with velvet. Coat the box as well as the back of the velvet with rubber cement and then stretch the material tightly over the box. Trim the overhanging edges with a razor blade.—*Arnold Smidt.*



Light Trap Negative Brush

THE FELT light trap that is attached to the spider of a film pack container makes an ideal negative brush. Its softness is verified by the



fact that it is made to be in friction contact with the unexposed film in the pack. A piece of wire or a pipe cleaner, soldered on, serves as a handle.

Be sure to use a damaged or rusted container, as empty film packs are needed by the film manufacturers for refilling.—*H. Klein.*

Safety Measure When Washing Prints

WHEN WASHING PRINTS under running water, place a glass, in the tray, under the faucet. The water will run over the edge of the glass, into the tray, eliminating the heavy stream which so often damages prints.—*Carl Engelman.*

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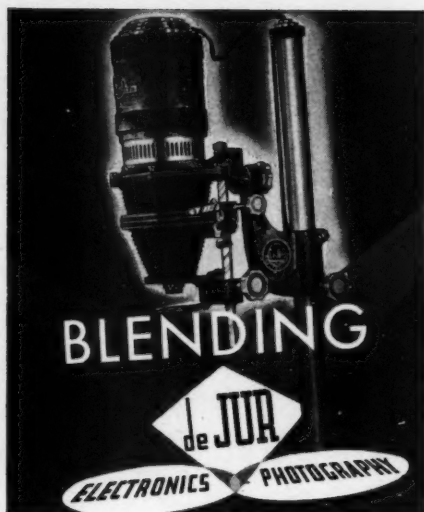
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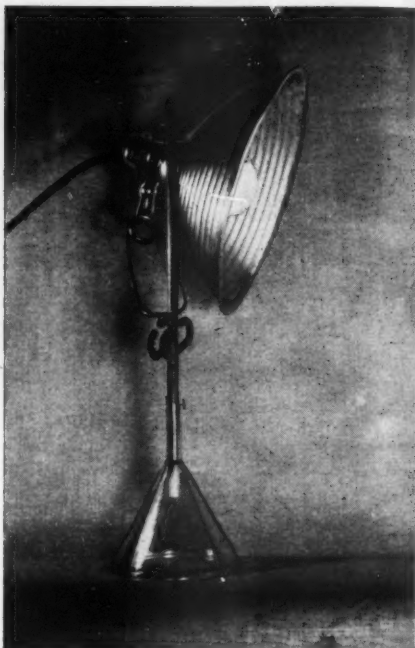
The School is a non-profit corporation organized for the training of photographers, designers and architects. Its unique educational method integrates art, science and workshop training into a program that serves the present and points towards the future. In the courses Photography and Motion Picture are emphasized in correlation with all the other subjects in the belief that a person can be a good photographer only if he is well informed about every facet of contemporary thinking and action.

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Table Stand Holds Reflector

A PLASTIC FUNNEL, a dowel taken from a wooden coat hanger, and a thumb tack can be



made into a table or floor stand for a photo-flood reflector. The stand is about two feet high and the thumb tack prevents the dowel from slipping.—Robert Scott.

Home Movie Titles

HOME-MOVIE TITLES with animated backgrounds, appropriate for vacation reels, or for films taken on a fishing trip, may be made by using a small aquarium, either square or rectangular in shape.

First, obtain a sheet of glass or X-ray film approximately the size of one of the larger sides of the aquarium. Write the titles on the glass or film with black slide ink, or fasten headline letters from newspapers to the glass with tiny drops of rubber cement. If using discarded X-ray film, the emulsion should be removed.

On the side of the aquarium, opposite the glass, a sheet of white, or light green bristol board, is attached with bits of tape.

Use two number one flood lights at angles to the front corners of the aquarium. The camera is centered on the title, using a tripod in the conventional manner.

Wording may be easily changed, and if the aquarium is of the "balanced" type, having plants as well as "fish," the titles will be amazing when projected.

If color film is used, colored letters add interest.—Graham C. Whitehead.



PRODUCTS

Improved Signal Shortstop



THE EDWAL LABORATORIES, Inc., of Chicago, announce a new Improved Signal Shortstop. This solution replaces Acetic Acid and features a "built-in" indicator which causes the solution to change color when it is exhausted.

Suitable for all papers and films, the pint bottle makes 32 pints of shortstop. Now available at your Edwal dealer at forty-five cents per pint bottle, or write to the Edwal Laboratories, Inc., 732 Federal Street, Chicago 5, Illinois.

Chrome-Tone for Toning

THE new "Chrome-Tone" sepia toner, recently introduced by Arel Photo Supply Company, 918 Delmar Blvd., St. Louis, is a Selenium base, one-solution, practically odorless toner. It requires no bleaching and is recommended for all projection papers with chloro or chloro-bromide base. An eight-ounce bottle of Chrome-Tone retails at \$1.00.

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words, only one exposure is required. The resulting prints appear ornamented with a real frame.

Inside the frame is a transparent area into which the picture negative must be adjusted. With the "regular type" of Framo Negative, picture and frame form one continuous unit, without space between. Type "A" provides for a white

margin between picture and frame. Such a margin often enhances the artistic features of a print. Price 50 cents to \$1.25.

Write for illustrated circular to the manufacturer and distributor, Mr. F. D. Fisher, 207 E. 84th St., New York 28, N. Y.

Ingher and Finger on Bromoil

FOTOSHOPS, of New York City have acquired the exclusive agency for the Berlett Bromoil Products in the United States. Mr. M. Z. Ingher, Bromoil Manager of the 42nd Street Fotoshop, and Mr. David Finger, Bromoil Manager of Fotoshop's 32nd Street Store have been conducting extensive tests on papers best suited for the Bromoil process.

Results of this research point the way to tremendous popularity for the use of Bromoils by amateurs and professionals alike. Until the results of the tests are prepared for publication, either Mr. Ingher or Mr. Finger will be glad to discuss Bromoil with MINICAM's New York readers.

"Highlights in the Life of Lincoln" in Kodachrome

A SET of twenty Kodachromes, "Highlights in the Life of Lincoln," complete with teacher's manual, has been announced by the Society for Visual Education, Chicago. Each Kodachrome—a 2"x2" miniature slide—is a scene from the Lincoln Dioramas, which were executed by the Museum Extension Program of Illinois. These include subjects selected by the Chicago Historical Society in collaboration with a group of eminent Lincoln authorities.

A complete list of scenes and other pertinent information will be furnished upon request to S. V. E. 100 E. Ohio St., Chicago 11, Illinois.

MY PET TONER

By GEORGE D. GREEN, A. R. P. S.

From *The Council Chatter*, St. Louis, Mo.

THREE years back Axel Bahnsen told me about two toners that were unusually and deservedly popular, namely, Agfa-Direct Sepia Toner and a special selenium toner, which for lack of a better name we will call the Reusch-Bahnsen-Greene Special Selenium Toner. These toners really work and the R-B-G toner especially has become a local byword. An accident played a big part in its success.

In getting the formula to me, Carl F. Reusch, who originated it, prescribed "sodium selenate" as the principal ingredient, but somewhere along the line it became sodium selenite, and this change seems to have made considerable difference in the results. The result that we in St. Louis get with the R-B-G Special Toner are entirely different in color than Mr. Reusch or Mr. Bahnsen get. It has resulted in many inquiries from out-of-town contributors for information on how we get our large range of tones.

The principal ingredient, sodium selenite, can be obtained only at Schiller's, 1109 Locust St., in St. Louis, at 35c an ounce, which, however, is enough to make two ordinary batches. The chemical itself is obtainable from only two manufacturers in this country and is used in the glass industry. The formula follows:

Sodium sulfite	1½ oz.
Ammonium Thiocyanate	2 oz.
Sodium selenite	150 grains
Sodium sulfide	75 grains
Water	1 quart

When this is mixed it is a clear brown solution and, after use, black pepper-like particles appear. Do not get rid of these particles, but keep them in the solution. The toner is used over and over. After a few months' use its results do change a bit and some of our local exhibitors keep



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For those of us who have used the toner no words of explanation are needed, but to those who have not let us say that it is about the only perfect toner ever "invented." It is fast, cheap, smell-free, certain. The color range it produces is very great, depending on the paper used and the length of toning.

The real big reason for the toner, however, is not color at all but a simultaneous intensification of the print and sharpening of the image that is indescribable but easily seen. If for no other reason than this it can be truthfully said that almost no print goes to salons today from St. Louis without at least a quick dip in R-B-G Special Selenium. Besides Mr. Bahnsen, such prolific and prominent exhibitors as the Prattes, both Paul and Dorothy, Paul Ring, Tripp Roberts and others will all testify that they owe most of the credit for their exquisite print quality and beautiful tones to this one bottle of toner.

The tones obtained vary. If very warm papers, such as Opal, are toned about 3 to 10 minutes they will come out a beautiful near-sepia. A quick rinse produces a warm black and an intermediate one tends to purple brown. Projection paper produces a final result approaching purple-brown and Velour Black goes purple-black. I like Opal best and can play several other color tunes with this paper-and-toner combination. Opal Z and Glossy Opal give entirely different tones from regular Opal. Furthermore, if development of the original print is done for black color, such as with Amidol or by forcing in D-72 you get still different colors.

Don't try to tone *bromide* papers such as Brovira and Kodabromide in this concoction as it *just won't work!*

Oh, yes—you don't worry much about washing out hypo. I should say 3 or 4 minutes is enough and I have toned with absolutely no washing at all, but the tones are colder this way. Complete washing

gives warmer tones than the ordinary 3 minute job.

The other toner that Mr. Bahnsen suggested to me in this memorable conversation was the mysterious concoction known as Agfa Direct-Sepia Toner which is obtained in photographic supply stores for the low price of 40c a bottle. A little of this goes a long way and if you mix it in the ratio of 50 to 1, as they recommend, you will have an extremely fast and attractive sepia toner without much odor and without the mess of having to bleach and redevelop. What Mr. Bahnsen recommended, however, was that the dilution be 200 to 1 instead of the recommended 50 to 1, and the color obtained will be an odd but attractive purple sepia. This color is used by several salon exhibitors almost exclusively in other parts of the country. About the only thing to remember either way is to use fairly warm water for the toning operation, at either dilution mentioned. Very little washing if any is required before using this toner.

Now that these two pets of mine have been described and recommended to you, I might mention that toners do things to pictures besides changing the color. Some of them, like the R-B-G Special Selenium and the Gold Chloride Blue Toner, intensify prints. Others like Agfa Direct Sepia leave the final image practically unchanged except that the print comes out a little lighter; others like Nelson Gold Toner and hypo-alum not only lighten the print a little but seem to add a pleasing softness which is desirable on harsh printing negatives. Use of these untoward effects can snap up or soften down a print providing the accompanying color is acceptable.

Also, the fact that Velour Black resists toning in toners such as the R-B-G Special toner, the gold chloride blue toner that follows and some others, may be taken advantage of when a less-pronounced tone is wanted. Particularly do I recommend Velour Black toned blue for daylight snow

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scenes. And you may be amazed to know, that one of the finest pure brown tones in existence comes from Velour Black toned in "liver of sulphur." Use the formula in the British Journal Almanac and heat just a little, to about 100°. In the case of liver of sulphur and Velour Black, the tone will be quite pronounced, and you will like it.

What would salons be without blue toned pictures! Several of my friends and I, humorously agree that blue toning is all that is necessary to hang a picture. Certainly it may be said that the intensification resulting from blue toning and the beauty of the tone itself has made many a salon print from an otherwise unacceptable scene. The average snow scene, marine, or night shot is a perfect set-up for blue toning and it may be used successfully with good judgment for some other types of pictures.

The toner is expensive and tricky and it must be emphasized that these instructions are to be followed without any change whatever. Take it from me, the formula and manipulation have been learned the hard way, namely, at the expense of many, many bottles of gold chloride which have been wasted in experiments. The formula follows:

Water	13 oz.
Thiocarbamide	10 grains
Citric acid	10 grains
Gold solution	1 oz.

The gold solution is made by dissolving the conventional 15 grain tube of gold chloride in 5 oz. of distilled water. The solution will keep several months if not exposed to the light.

The toner must be mixed immediately before using and will tone two 11x14 prints if toned simultaneously, back to back, but will not tone both if they are toned consecutively. Fifty per cent more gold solution is required to tone two 14x17 prints simultaneously, back to back, and ⅓ of an ounce of gold solution will tone a single 14x17 print. Cutting the amount of gold solution a little will result in a somewhat less blue tone.

The choice of paper will determine the final color. Opal gives a very deep blue, Projection a medium blue and Velour Black gives a grey-blue. All these tones are beautiful and are practically the only blue tones acceptable in today's salons.

The print is developed in the usual manner for about 2 1/4 minutes in D52. Fixing in a freshly mixed hypo solution is almost mandatory, followed by a long thorough wash. Fixing in a freshly mixed bath of plain hypo and water without any hardener added is followed widely by many pictorialists and will work better with any toner except blue. If you follow this practice, be sure that you add one ounce of sodium sulphite to your plain-hypo-and-water fixing bath and you will have no difficulty with this particular toner.

There aren't very many colors a photograph can be toned. The ones which are difficult to manipulate, such as copper or uranium we will not discuss. The ones I have mentioned are fool-proof, attractive, and sure to bring happy results in salon competition.

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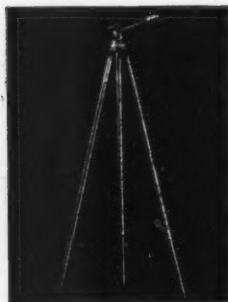
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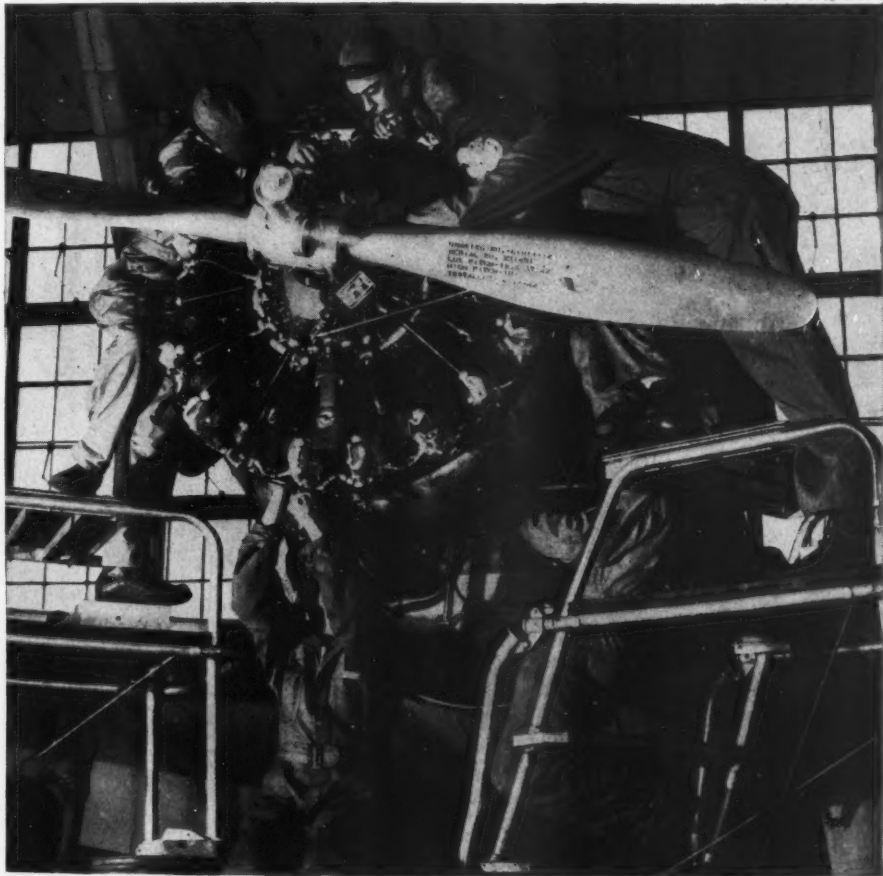
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